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Among Our Neighbors

H. M. ANDERSON,
York County, Pa.

N.J. Agr.

The story of the organization and effective development of the Norrisville Farmers' Club, in lower York County, Pennsylvania, was told in these columns some months ago. The question is asked if such a club is possible in every agricultural community. The answer must be that the success of local organizations, as indeed, the standard of farming in local communities, depends to a very large degree upon the character and quality of the local leaders.

The Anderson family has long been closely identified with the activities of the Norrisville Farmers' Club, and thru it, with the development of agriculture in southern York County. Several generations and various branches of Anderson geneology have contributed to the transformation of what was once known as the York County barrens into one of the most progressive and uniformly prosperous farming sections of the state. They were compelled to follow constructive methods from the start. The soil was naturally unproductive, and the system of farming followed had to be such as would care for immediate needs and build for the future. This is what is designated as permanent agriculture, and there are many useful lessons to be learned from the methods here followed.

One of the foremost of the present generation of leaders is Mr. H. M. Anderson. He is well known to the farmers of many sections of this state as an institute speaker who has an intensely interesting story of soil building and constructive farming to tell. A visit to his farm and a first-hand inspection of the many interesting features to be found there, add to the weight of his institute story. Mr. Anderson occupies a farm that has been in the family since 1851, having purchased it from his father a few years ago. The records of the early transfers of the farm are of interest as showing the struggles which the early farmers met in gaining a foothold. These records show that the farm was frequently sold at sheriff's sale in those early years at remarkably low prices. The court records give the transfer prices in dollars and cents, and on one occasion the cents were shown to out-number the dollars.

FARM HOME OF MR. H. M. ANDERSON, YORK CO., PA.

The farm at the present time contains 125 acres, with about 110 acres under cultivation. General farming is practiced. Corn, alfalfa and clover are the main forage crops. These are fed to steers, hogs and mules, and the manure goes back onto the farm. Potatoes, tomatoes and sometimes cabbage are the principal money crops; tobacco having been dropped. Soy beans, grown for seed or silage, have been an important crop in some past years. The lure of the Stayman Winesap is now being felt, however, and a departure from general farming is being made, with a view to gradually turning the farm over to apple production.

The general plan followed except where orchards or alfalfa have been introduced, is a five year rotation of corn, potatoes and usually ensilage corn, wheat and two years in meadow. The past season there were 24 acres of corn, showing a magnificent growth at the time of our visit (August 15) but being injured somewhat by drouth when the ears were setting. The dry weather continued as the crop was maturing, but the yield averaged about 65 bushels of shelled corn per acre, which is the poorest crop he has ever grown. Crimson clover is sown in the corn at the time of last cultivation, to secure a cover crop thru the winter and to be turned under the following spring. This practice has been an important one in maintaining and improving the fertility of the soil. The corn being fed on the farm and the manure returned to the land, the large acreage in this crop fits in well with the plan of soil building.

THE BARN ON THE ANDERSON FARM, LOOKING DOWN A ROW OF THE PEACH ORCHARD SET IN DECEMBER, 1913.
The Potatoes Interplanted in this Orchard gave 225 Bushels Per Acre the Past Season.

Mr. Anderson, like most of his neighbors, has come to the conclusion that oats are an unprofitable crop in his section. Accordingly the oats were dropped from the rotation some years ago and potatoes substituted. The location of a new canning factory in the community the past year opened the possibility of bringing tomatoes into the rotation, and these were tried out for the first time this year; partially as an experiment and in comparison with potatoes. Five acres of tomatoes were set out, the varieties being Burpees. Success and Greater Baltimore. These were grown at a contract price of 28 cents per bushel of 60 pounds. A splendid growth was secured, but the dry weather the latter part of the season cut the yield somewhat. The crop gave 380 bushels per acre. They will be grown again next year.

The potato acreage was cut short to make room for the tomatoes but a sufficient number were planted to continue a variety test which has been in progress for sometime. The Late Petoskey, American Giant and Bird's Success have given returns and are being retained as best varieties for local conditions. Of these, the Late Petoskey gave the best yields last year (1912), having produced 220 bushels per acre. Past seasons, under favorable conditions the crops have averaged 200, 250 and once 300 bushels per acre. Unless tomatoes prove to be as profitable, both in point of money returns and labor costs, they will be dropped and potatoes put back in the rotation.

One sight that is certain to catch the eye of the traveler over the "farmers' railroad" from Stewartstown to Fawn Grove is Mr. Anderson's alfalfa field. He has 11 acres in two seedings of seven and four acres. The seven acre field was in its third year the past season, and it cut a total of 20 tons of alfalfa hay of very fine quality in spite of the dry season. It was as even a stand as could be found and remarkably free from weeds. The smaller field is a new seeding but gives promise of equaling the older meadow in productivity. The alfalfa has revolutionized the feeding business on this farm. With corn for silage and grain, and alfalfa for forage, the only purchased feed for steer feeding is cottonseed meal.

As has been said, Mr. Anderson is enlarging his apple orchards as rapidly as possible. This change in the farm system is due partially to the general popularity and success of the Staymen Winesap apples in all of that section of the county, but more specifically to the results obtained from his five-acre orchard of eight-year-old trees. This orchard was planted 20 by 36 feet, with York Imperials as fillers, to be removed before the trees reach full growth, leaving the matured trees 36 by 40 feet. Another orchard of 13½ acres was planted three years ago, following the same plan of planting. In the new orchard there are 500 Stayman Winesap trees, 200 York Imperials and 100 Grimes Golden; the two latter being planted as fillers. There is also a five-acre orchard of 9 and 10-year-old trees where the York Imperial is the standard and Ben Davis and Rome Beauty, etc., are fillers. The illustration on this page shows Mr. Anderson sizing up one of his three-year-old Stayman trees. It also shows the type of tree he is growing and his method of pruning to secure low, open tops.

But the fields and orchards show but half the story on this farm. The 57 by 72-foot barn shown on first page is the factory in which the forage crops are converted into beef and pork. The barn is 20 feet to the square and provides abundant storage room for hay and grain. At the time of our visit it contained 25 tons of alfalfa for this winter's feeding and 46½ tons of timothy hay for sale. A silo completes the storage outfit. It is of a home-built type, having green white-oak bands bent inside and outside of the studding and finished in side and out with yellow pine flooring. It is 30 feet high and 16 feet in diameter. It was the first silo to be built in the community, and is still in a splendid state of preservation after storing 17 successive crops. At one time a dairy herd was kept but dairying was not a congenial occupation and milk prices were so low that the herd was disposed of. The silo, however, has proved to be as valuable in steer feeding as in dairy work and is considered one of the best investments ever made on the farm.

About 15 or 20 steers are bought every fall to be fed thru the winter. Their ration consists of alfalfa hay, silage, fodder, corn meal and a little cottonseed meal. As nothing is purchased but the cottonseed, there is little money going out for feed and in several years of this practice the steers have not failed to pay good market price for the home-grown materials. Feeding usually starts about the first of October with steers of, preferably, about 800 pounds weight, usually purchased from a local dealer. Last year 12 steers were bought October 10, weighing 850 pounds. They were sold February 10, by which time they had made an average gain in weight of 304 pounds. Another lot of eight steers was put on in February and fed thru until May 1, making corresponding gains.

There is very little soil fertility being sold off the farm under this system of management. The barn is of the familiar over-hanging type, which gives a covered run for the steers and protects the manure which accumulates. Here the manure is stored thru the winter months if it is impossible to get it onto the fields, and with the tramping of the stock there is practically no loss from evaporation or leaching; the plan however is to haul it every week or at most two or three weeks when the fields are in condition to receive it. Manure is top-dressed on the clover meadows for the benefit of the succeeding timothy so far as possible. The rest is spread on the timothy sod to be plowed under for corn.

MR. H. M. ANDERSON SIZING UP ONE OF HIS STAYMAN WINESAP TREES.
Sweet Corn in Background. Note Low Open Head on Tree.

Another profitable line of feeding is with mules. Mr. Anderson buys mule colts at the weaning age, usually at about $80 to $90 each. These are put on pasture in summer and fed thru the winter. He begins working them at two years of age, from which time they will pay for their feed and keep. When they are three years old, they are trained and matched up as teams, and they then sell readily at from $300 to $500 per team. Mules are expected to do practically all of the team work on the farm in the future. The team of coming four-year-olds, shown at the watering trough in the covered yard, could not be purchased at $500.

A new 16 by 42 foot hog house with floor above for storage of feed, etc., is a part of the farm equipment. The hogs fed are the progeny of sows kept on the farm; usually three or four which are bred spring and fall. The aim is to never sell shotes, and they are seldom bought. These hogs are fed until they weigh 200 to 250 pounds, and are then sold direct to near-by butchers. Corn is used exclusively as a fattening grain, but while the pigs are growing their corn is supplemented with alfalfa hay, which they eat readily, and shorts and tankage. The tankage is never used alone, as the pigs do not eat it readily in that way.

Soy beans have been grown on this farm at different times with success and profit, altho they have never been made a regular part of the rotation. They were grown primarily for seed, the yields ranging from 15 to 20 bushels per acre, which sold at $2 to $2.50 per bushel. Soy bean hay has also been used profitably as a supplement to corn in silage. When used for this purpose, the beans were cut with a binder and a small load cut into the silo between loads of corn. At such time both corn and beans were put into the silo in slanting layers, to give a better distribution when the silage was taken out on a level surface. Tobacco was once grown regularly on the farm, but has been permanently dropped; not because of any uncertainty as to yields, but because of the practical certainty of unprofitable returns.

Taken as a whole, as well as in individual crops or features, this farm shows a well-ordered, systematic plan of management in which each department interweaves with all others to give a well-balanced general plant. It is a system that is paying good annual profits and at the same time is building for the future in increased fertility and enlarged productiveness. It is a splendid example of maintaining and increasing the bank account of soil fertility while drawing for current needs and annual dividends.

But farming is more than a business of producing crops and making money. It is a scheme of life in which the home as well as the social and community activities are essential factors. With all of the honest pride which Mr. Anderson may justly feel in his work as a farm manager and operator, his measure as a man and a citizen is in the home and the activities centering about it. The cozy, comfortable dwelling, which can be but inadequately shown in the illustration because of the fine old trees sheltering it, is almost a model in its equipment. It completely disproves the old idea that a farmer must move to the city to enjoy convenience and comfort in the home. It is heated with steam, has a pressure tank water system which supplies hot and cold water to both floors, and is lighted with acetylene gas. A low-power gasoline engine pumps water to the pressure tank as well as to the barn troughs and does other light-power work. The house is located on a rise of ground which gives a beautiful view over many miles of surrounding country. With a comfortable, five-passenger automobile for pleasure as well as utility purposes, the family is within easy reach of railroad stations and markets, and has every convenience and comfort that can be enjoyed in a city home, and many others that money could not buy in any city.

One room in the house is fitted up as a combination office and library, in which are to be found a good selection of magazines and other periodicals, as well as a collection of the best books. Here Mr. Anderson has his desk where are kept not only the records of his farm, but records and papers pertaining to his many club and community duties, in all of which he is busy in official capacity.

Presiding over this home is Mrs. Anderson, a charming "country-minded" woman, in close sympathetic touch with every activity of the farm and enthusiastic in her loyalty to farm life. Two sturdy little girls, four and two years of age, complete the happy family circle. Around those girls are being built the plans for the future and in them is found the best incentive for the rounding out of a perfect life and the hope of the best things in life.—A. J. A.

POTATO GROWING IMPROVES SOIL PRODUCTIVITY

German farmers have found that many indirect benefits result from potato culture, thru modern methods of crop rotation, green manuring and fertilizing. In a recently issued bulletin entitled "Lessons For American Potato Growers from German Experiences," the specialist of the Department of Agriculture describes among other things how Eastern Germany benefits from the cultivation of the potato.

The potato has played the greatest role in the agricultural development of light and fertile soils of this region, as the sugar beet has done in heavier soils. According to German specialists, these hoed root crops are beneficial to any soil, thru the deep and thoro culture that is given them, with its resultant improvement in the physical condition and aeration.

The profits from the crop justify the liberal use of commercial fertilizers, from which there are important residual effects on other crops in the rotation. The clean culture practiced also brings all weeds into thoro subjection. The yields per acre of all farm crops have been greatly increased since the extension of potato growing. Potato tops are now dried and used for stock food on many estates. The by-product, mash, resulting from the distillation of potatoes into alcohol is also an important economical factor.

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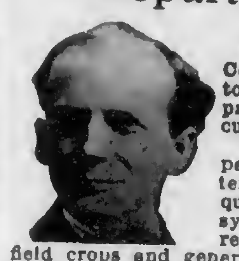

By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

What Did The New Year Bring You?

There is a sense of satisfaction in finding a balance on the right side of the ledger when, on the first of the year we compare our goods and moneys with what we had on last New Year's Day. But our taking of stock is not complete if we stop at listing and comparing our material things. How do you as an individual compare with last New Year's self?

Are you wiser, better, stronger in every way? Is your home, of which you are a part, a better home? Do you have a sense of fuller harmony with nature? Have your sorrows and disappointments, your successes and failures, strengthened or have they weakened your faith in God and man? Are you more optimistic, more agreeable, more charitable? Can you laugh as readily and forgive as easily? Have your experiences made you richer in the things worth while, so that you look forward with confidence as you stand on the threshold of the new year?

A TEAM OF MULES ON THE ANDERSON FARM, COMING FOUR YEARS OLD, THAT CANNOT BE BOUGHT FOR $500.

If not, why not? May it not be because the viewpoint has been wrong? If that is true, would it not be wise to change it; to look upon life as an opportunity to give and to serve; to give out, and not absorb only? They who uninterruptedly prosper in selfish ambitions often crawl out of life backwards, disappointed and dwarfed. Take account of stock, but do it honestly and fairly.

Wild Grass and Dodder Pests

C. P. D., New York, writes: "We have a field of 15 acres that is hard to seed. It will grow potatoes or grain very well, except that a short fine grass, and what is here called, devil's-gut, seem to crowd grain and grass out. Would sweet clover be good to sow on this piece? We have the ground plowed this fall. What time would you sow it? Would you sow it in grain and plow in the following year, or sow alone and plow in the fall or following spring? We want to plow down some crop to fit for potatoes. It is dry, level land, partly gravel"

The "short fine grass" is evidently a natural or wild grass, one of the many varieties that will flourish on land that needs lime before desirable grasses will grow. Our correspondent does not say whether lime has been applied to this field or not, but the indications are that an application of lime is needed to make the land so friendly to desired grasses that the wild grass can not grow.

The "devil's-gut" is a species of dodder, a parasitic plant; vining out and living on other plants. As this field seems to be badly infested with this pest the only practical method to pursue is to not sow or plant anything in the field next summer, but keep it harrowed, thoroly killing the weed out as fast as it appears. I would suggest an application of lime in the spring, keep harrowed until September 1st, then seed to rye and winter vetch, sowing about three pecks of vetch seed and six pecks of rye per acre. Plow this down the following spring when rye is 12 or 15 inches high, and plant potatoes. Thoro cultivation of potatoes will still further tend to eradicate the pests. It is possible that artificial inoculation of vetch seed would be advisable.

Nitrogen for Corn

H. C. K., Liverpool, writes: "I have a field that in 1912 had a heavy growth of alsike and red clover. A crop of hay was cut. This was followed by a second crop, almost equaling the first crop. The season of 1913, another crop of hay was cut. There is a heavy sod on it now which is being turned down for corn. Is there any nitrogen left in the soil from the clover? Again, what analysis of fertilizer should be used on the field for a crop of corn? The field is in a fair state of fertility."

From this description, it would seem that only one thing more would be desirable to make this an ideal field for corn; that would be to have applied a coat of manure immediately after the hay was harvested. Without doubt there is a large part of the nitrogen gathered by the clover left in the soil in the undecayed roots and stubble. But since this will not be available in any great amount until hot weather comes, it is advisable, in the absence of manure, to apply some in a soluble form to start the plants. Also, as it is scarcely ever an error in treating Pennsylvania soils to prescribe phosphoric acid, and often potash, I will write the following long-range prescription: Nitrogen, 1½ percent.; phosphoric acid, 8 percent.; potash, 5 percent. Drill in row 150 lbs. per acre, or, what is still better, sow or drill broadcast 300 lbs. per acre.

Ashes and Salt

"I have five tons of wood ashes, hickory and sugar, and can get more. They are all dry, direct from the wholesale pork packers. I can also get the same amount of salt that went thru pork curing process. Please inform me for what crops ashes and salt are suitable and how much to use, drilled or broadcast. Are the wood ashes good to drill in with corn or any other grain? My soil is a deep sand loam, well limed and manured.—H. J. R., Butler Co., Pa."

Hardwood ashes, such as these, have a fertilizer value of from $6.50 to $7.50 per ton when compared with equal amounts of plant food and lime in other materials; altho they do seem to bring greater results, than does lime phosphoric acid and potash from purely mineral sources. Why this is so is hard to tell. The salt has little or no agricultural value. The inquirer will get greatest returns by broad-casting the ashes on grain or grass, and especially on newly-seeded clover fields, three or four hundred pounds per acre. They are also valuable for use on any kind of fruit soil, either tree or bush fruits. Ashes should not be drilled in corn-rows.

AGRICULTURE AS A STUDY

"My boy is going to start to the Agricultural College at ———, next week," remarked one of our seemingly most prosperous farmers a few months ago. "You see I have come to the place where I do not know what to do. The old farm is getting worn out. I know in a general way that lime and manure will do it no harm; but there are too many problems which I have no idea how to solve. And so I'm going to send John to college, and let him find out."

This is quite the opposite course from a generation or two ago, when it was deemed that the farmer needed to know about as little as any one,—providing only that he knew how to drive and feed a team and to manage the ordinary farm machinery. Schooling was for him quite a superfluous article after he had passed fractions.

The growing impetus along agricultural lines is one of the most hopeful signs of the times. All over this country there is a fast growing demand for agricultural teaching. A young man who has prepared especially along biological lines reports ten applications for the practical agriculturist to one for the biologist. The food supply is a question of national import; and the man who furnishes this food is bound to be the coming man. Every eye is turned to the methods which will produce two blades of grass where one formerly grew; which will make this orchard more productive; which will come to the front with a higher grade of stock. We hear much of soil foods, and in our own minds we are convinced that the abandoned farms will in another generation be reclaimed, and prove the richest inheritance. Science reconnoitered for years, getting her bearings; but now she has found them and is settling down to a practical basis. The farm boy who cannot go to college is getting a course in agriculture in the public schools; but many farmers are awakening to the fact that they cannot hope to compete in this age without placing at least one boy in an agricultural college. And he will return ready to solve the problems in a practical way.—Bessie L. Putnam, Crawford Co., Pa.

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Horticulture

LESSONS FROM COMMERCIAL GRAPE GROWERS

If one can propagate a choice new grape successfully, or grow some of the semi-hardy grapes of good quality out of the natural grape belt, he will find it well worth his while. The Green Mountain or Winchell grape is probably the best of the very early varieties. There are few higher in quality. It is fairly hardy, and ripens so early it can be grown safely usually in the colder sections of the country. The price of vines still remains so high that they are almost prohibitory to the commercial vineyard men. Desiring a considerable number of vines for my vineyard, I decided to plant cuttings and grow vines for planting. In the spring I selected a rich plot of clay loam, and planted cuttings I had kept during the winter in dry soil in the cellar. These cuttings were given fairly good culture. When I dug up the next year those that lived, they were like sticks with a few short scraggly roots on them.

DOWN THE ROW IN A CHANTAUQUA CO., N. Y. VINEYARD. NOTICE THE LIGHT SOIL WITH GRAVEL MIXTURE.

I have since visited Fredonia in Chautauqua Co., N. Y., the world's greatest nursery center in the United States for grapes and small fruit vines. More than 10,000,000 grape vines are annually grown and sold in the vicinity of Fredonia. The larger part are sold wholesale to distributing nurserymen and dealers. If one buys grape vines anywhere in the U. S., he may get Chautauqua grown vines. I visited the large propagating nurseries there and tried to learn their method. I was shown one year old vines, in the storage cellars, that had only one summer's growth, and some of them were nearly two feet long and were a mass of fibrous roots.

Inquiry of the Fredonia nurseryman as to how he could grow better vines in one year than I could in three brought the reply, "Because of our soil." The soil is the original bottom of Lake Erie, and is a rich deposit of light sandy loam, somewhat gravelly. It is very porous and admits sunshine and moisture freely and because of the gravel it retains heat longer than clay soil. It is the congenial home of the grape. Our soil is our natural asset and explains how we are able to grow vines for the world with little fear of serious competition." Inquiry as to methods elicited further interesting information. He said. "The most of us nurserymen own bearing vineyards. We begin pruning as soon as the crop is harvested, and bury the propagating wood in soil out of doors. If we continue pruning thru freezing weather, we cover the ground deeply with straw so it will not freeze, and bury the wood we cut off under it. In the spring we take up the wood, cut into pieces with two or three eyes, and plant 6 inches apart in rows about 2 feet apart and keep clean with cultivator and hoes all summer." I had learned some lessons and will not plant any more dry cuttings in heavy clay soil.

The soil of Chautauqua county is not only one of the best soils in the world for propagating grape vines, but it is equally desirable as vineyard soil. I rode many miles thru almost unbroken vineyards. found the vines thriving and bearing great crops. Concord is most planted, with Niagara and Delaware next. Here I learned my lesson again. The next vines I plant will not be on rich clay loam which is my best garden soil, of the low flat lands on my place, but I will select the higher elevation, with longest exposure to the sun, perhaps the gravelly knoll. The soil will hold heat longer and is so loose and porous, the grape roots will go deeper, wider and make a mass of fibrous feeding roots. Thru elevation and better air drainage the vines will escape more of the frosts of a colder country.

Before visiting the commercial grape section of New York I had tried to grow the Niagara grape in Delaware county where semi-hardy varieties are a doubtful proposition, and I found that some winters the vines winter-killed. In Onondago Co. I saw the Niagara grown very profitably in a commercial way, where the seasons are but little more favorable than in Delaware Co. Here I learned about the one and two year renewal system by which the best semi-hardy varieties are grown. I saw a vineyard of 50 acres where this system is very successfully practiced. In brief, the vines are laid down every fall, which is sufficient protection with little or no convering. Two or more vines are allowed to grow up from the roots, according to their size and strength. The main vine and laterals are shortened perhaps one-third, after the foliage is off, and laid down and held in place in some way. The next spring it is taken up and the vine spread out and tied in a V shape to the three wire trellis. When the vines get too large to bend over and fasten down easily, they are cut off and renewed from the roots by growing new canes as I have described. I went home and tried the plan. I am now able to get my Niagara grapes safely thru the coldest winter.

While growing grapes in a commercial way may not be a good proposition for many who are outside of the natural grape sections, yet I have demonstrated that a great abundance of good varieties can be grown for family use. Only in one year out of ten have I failed to ripen the Worden Niagara, Delaware and Moore's Diamond, and I do not see why I should lose my earliest kinds, which are Moore's Early and Winchel, any year. From the commercial growers in my state I have learned how to propagate vines, where to plant them, how to prune them, and how to protect them in winter. With this knowledge I do not see why any who has a piece of land need be without a full supply of fruit.—W. H. Jenkins, Delaware Co., N. Y.

CARE OF ASPARAGUS BEDS

Asparagus is one of the few crops that will grow without cultivation and without fertilization. It is probably due to this fact that such a diversity of opinion exists as to best methods of handling the crop to get the most profit from it. For instance, many growers claim that the tops should not be removed in the fall, but should be allowed to stand so as to keep the soil from blowing. Other growers claim that this is a bad practice; that the tops should be cut and burned just as soon as they die in the fall, so as to destroy the spores of the rust which is doing considerable damage to asparagus plantations. The question as to just how to fertilize the asparagus beds, what to apply, and when to apply it is equally perplexing. I give herewith an account of our method of caring for our asparagus beds together with the reasons for our methods, hoping that it may help to solve some of these puzzling questions for others.

In the first place we have a considerable acreage of poor light sandy soil. We have found that asparagus is one of the few crops that we can grow on this soil. Nearly every year we plant a few acres of this sandy soil to asparagus. We do not fertilize heavily at the start but keep applying a limited amount of manure year after year. Then as the asparagus grows and begins to return a profit we increase the amount of manure applied.

In the fall as soon as the asparagus tops are dead we mow them off close to the ground. By cutting them off early, we prevent the seeds from being scattered so widely as would be the case if we left them standing until early winter, or all winter as do some growers. Asparagus seed in an established bed are just as much a nuisance as weed-seed; the young plants have to be destroyed as soon as they come up. As soon as the tops have dried they are raked into heaps and burned. This destroys many seeds, and what is of more importance, the spores of the rust.

Growers who allow the tops to remain standing over winter claim that the destruction of the spores of the rust is no advantage of the fall removal and burning of the tops; for say they, "It has been shown by scientists that the winter spores of the rust do not live until the end of the cutting season; so what is the use of burning the tops to destroy them, when the tops might serve to hold the snow, keep the soil from blowing and furnish humus-making material when incorporated with the soil the following spring." It is true they have a good argument, but we cannot use the method, because, as stated above, we are starting a new bed nearly every year. Did we not destroy the rust infected tops as completely as possible, the spores would be present early in the spring in sufficient numbers to attack and weaken the newly set plants before they had gained sufficient hold of the ground to withstand them. Prof. J. B. Norton in his work of breeding asparagus for rust resistance at the Concord, Mass., Experiment Station found that the winter spores of rust are carried long distances by the wind in early spring; so that it is also no more than just to our neighbors, who are undertaking to start new fields, that we should do all in our power to prevent our fields from infecting their newly established beds. Where there are no new beds of asparagus being started in the community or when rust resistant varieties become introduced, the method of leaving the tops as winter protection will of course be the best practice.

"But" some one may ask, "how do you keep your light sandy soil from blowing when you cut and burn the tops during early fall?" We accomplish that with our system of fertilization. Soon after the tops are out of the way we broadcast from 6 to 10 tons of long, town horse manure over the beds. This almost entirely prevents blowing, and since the manure is rather coarse, there is very little loss from the fertility becoming quickly available, and leaching out, before the following summer when the asparagus is ready to make use of it. The quickly available commercial fertilizers, poultry manure, or well rotted barnyard or town manure, should not be applied until during, or at the close of the cutting season—from the middle of June to the first of July.

Asparagus is by no means an exhaustive crop. According to analyses made by Wolff, a large crop of three tons of asparagus spears, removes but 19.2 pounds of nitrogen, 5.4 pounds of phosphoric acid, and 7.2 pounds of potash. It would take but two tons of average barnyard manure to supply this amount of nitrogen, and one ton would more than supply the 5.4 pounds of phosphoric acid and 7.2 pounds of potash required. But in fertilizing it is well to keep in mind the fact that the more fertility the soil contains, within a reasonable limit, the larger will be the sprouts or spears.

With our sandy soil the problem of getting large paying crops of first grade asparagus is as much a problem of holding the soil moisture as it is of supplying plant food. By supplying nearly all of the fertility to the soils in the form of manure we increase its water-holding capacity as well as furnish the necessary plant food.

About sixteen years ago we planted our first bed of asparagus. I judge we applied on an average about 8 tons of horse manure yearly. We used no commercial fertilizer and but a few light applications of poultry manure during this period. At the end of the cutting season, about the last of June 1911, we plowed it up and planted corn. We harvested a large crop of fodder corn the following fall. Last year we applied from 600 to 800 lbs. of a 2-8-10 brand of fertilizer to the acre and planted sweet potatoes. From a measured acre of that field we harvested 615⅜ bushel baskets of marketable sweet potatoes. That was the largest yield of any sweet-potato grower exhibiting at the New York Land Show last fall. This year we have harvested a large crop of peppers from the same field. The ground is now as productive as a rich loam and it was gradually transformed from the light unproductive soil to its present condition by the yearly application of 8 tons of stable maure, all of which was paid for many times over by the amount of asparagus sold. In fact, that field of asparagus, during the twelve years in which it was cut, averaged as much clear money per acre as any crop we have grown, with the possible exception of strawberries and tomatoes, both of which demanded more fertile ground.

To summarize: Where new fields of asparagus are being started, the tops should be mowed and burned as soon as they die in the fall. This destroys a large portion of the seed as well as the spores of the rust. This is not necessary where no new beds are being started in the community, for the spores die before the end of the cutting season. Sandy soils are kept from blowing by application of coarse stable manure. Quickly available fertilizers should be applied at the close of the cutting season—not in the winter when the roots are dormant. A yearly application of 8 tons of manure has greatly increased the productivity of sandy soil, while a paying crop of asparagus was being removed.—Harris T. Kille, Gloucester Co., N. J.

Variety Tests of Wheat.—An interesting Bulletin under this caption comes from the Pennsylvania Experiment tSation at State College, being No. 125 of that station. The tests cover varieties from many sections, five varieties having been under test ever since the work was started twenty-two years ago. The tests apply more particularly to Hagerstown loam soil, but some interesting compariso s have been drawn.

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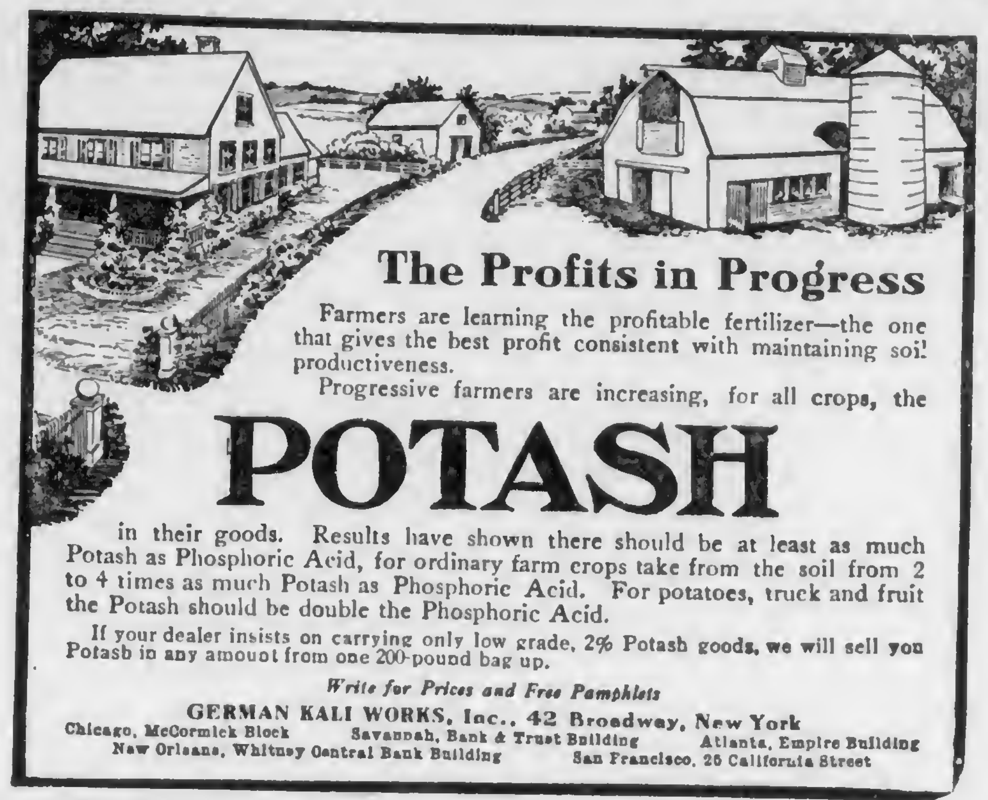

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Cow Testing Associations.

By H. W. GILBERTSON, Agriculturist, Sussex Co., N. J.

A Cow Testing Association is an organization of dairymen for the purpose of securing, at the least expense, accurate records of the production and cost of production of each cow in the herds of the members. The first Cow Testing Association was organized in Denmark in 1895. It proved so beneficial in that country that the number had increased to 530 in 1909. The movement has spread to other countries, and Sweden now has more than 700 associations, while Germany has more than 267, all organized since 1907. In Denmark the average number of pounds of butterfat per cow has been more than doubled since 1884, being increased from 112 to 235 lbs., while in 1900 the yearly average for the United States was only 145 lbs. The first American Association was not organized until 1905, but there are now more than 120 and new ones are being organized nearly every month. The first organization of this kind in New York State was in Delaware county, where two associations were formed in 1910. There are now 11 in that State while New Jersey has none.

Methods of the Association.—A dairyman or "Cow Tester," employed by the association, spends one day each month on each farm in the organization. He weighs the milk of each cow and tests it for butterfat, weighs and calculates the cost of her feed and determines the profit or loss on each cow for the twenty-four hour period. This is used as a basis for figuring the month's record. At the Minnesota Experiment station, where the milk from a herd of about 40 cows has been weighed every day for nearly twenty years, it is found that by taking the records for one day each month as a basis for the yearly summary the Cow Testing Association method gives an average error of only about 2 percent. The man who weighs the milk of each cow one day each month can therefore usually determine within two percent. of what each cow in the herd is producing per year. This is accurate enough for all practical purposes.

CHAMPION HOLSTEIN BULL AT LANCASTER CO. FAIR, 1913.
Owned by H, C. Reinhold.

Cost of Feed.—With the help of the dairyman the tester should determine the cost of feed for each cow during the preceding month and the amount of grain feed which should be fed to each cow per day during the coming month. The amount of feed required should be calculated from her milk production, condition and feed during the preceding month. The tester, from his training and experience as well as from his observation of methods of feeding in the other twenty-five herds in the association, should be able to assist the owner in finding the most economical grain ration to use with the available roughage in order to get the largest net profit per cow.

The tester starts his work at each dairy in the afternoon by weighing and recording the amount of milk produced by each animal. The same kind of records are taken the next morning. The calculations are made and recorded during the day in time to reach the next dairyman for the afternoon work. The results are placed in the farmer's herd book, which is kept on the farm and the association record book kept by the tester. At the end of the year the tester completes all records, leaving the farmer an accurate record of each cow in the herd.

Results of Cow Testing Associations.—Cows are found in some herds which do not even pay for the cost of the feed they consume. Many dairymen discover that the cow they considered the poorest stands among the best in the herd. In a California Association one man bought a cow for $42 that the owner considered "worthless" and this cow proved under test to be very valuable, giving 97 lb. of butterfat in 58 days. Some dairymen in five years have doubled the production of their herds with the same number of cows. This is an extreme case, however, and those who join the association must not expect such an increase. It is fair to expect that the average profit per cow should be increased from $5 to $10 at a cost of $1 per cow, if the boarder cows are replaced by better cows and feeding methods are improved.

In a Michigan Association the average number of pounds of milk per cow was increased from 5802 to 6426 in four years, the average percent. of butterfat per cow was increased 0.31 percent. and by better management the profits were doubled. The cows from one New York Association exhibited at the New York State fair last year were so nearly alike in conformation and type that only about one-half of the experienced dairymen visiting the fair could pick out the poorer cow. The better cow showed in the year's test $72.12 more profit for the year than the other.

A dairy was found in one association that made a profit during one year of $800 from 35 cows. The best 23 cows in this herd would have made within $32 as much profit as the entire herd. This knowledge enabled the dairyman to eliminate his poor cows and replace them with more profitable ones. In one year the average production in another association was increased more than 500 pounds per cow. In a Nebraska Association ten of the best cows yielded a net profit of $1,032, while ten of the poorest cows gave a total profit of only $57. The returns in a Cow Testing Association in Sweden were $18,153 greater from 639 cows the tenth year than the same number would have returned the first year, while the profits were nine times as great the tenth year. The cost of this added increase was only about $639. In many herds by more economical feeding the average cost of feed per cow has been reduced almost one-half. The monthly meetings held by the members are of an informal nature and very beneficial.

The cost of running a Cow Testing Association one year will be between $525 and $600, depending upon the wages it will be necessary to pay an experienced dairyman to do the weighing and testing and keep all of the records. It should be possible to hire a man qualified for this work for about $40 per month and board. The man should furnish his own horse. Twenty-six herds will be secured and considering the average size of the herds this will bring about 575 or 600 cows into the association. The tester should be a first-class dairyman, who is an expert in using the Babcock test, qualified to give advice on feeds and feeding and to keep an accurate record of each cow. It would be possible for the dairymen to do their own weighing and keep their own records but the best argument against this is the fact that most dairymen seem too busy and do not do it even if they resolve to do so. The association way is the cheapest since a man who weighs, tests and keeps records every day can do it in at least one-third of the time that the average man can do it.

REGULATION OF MILK TRADE

Last spring the New Jersey state board of health announced on one occasion that the number of dairies that scored above the stipulated percentage was smaller than the number of those falling below. The report for November was better. Of 280 dairy inspections made by the state, notice was given in three instances prohibiting the production and sale of milk. These dairies had customers in Newton, Long Branch and Trenton. The number of dairies scoring above 60 percent was 223; below, 54. Of the latter, nine were notified to improve their methods in handling milk within a limited time. These supplied Long Branch, Paterson, Pompton and Trenton. Marked improvement is reported in the condition of certain dairies that supply Trenton and Atlantic City, a re-inspection of which has been begun. Only one previous tour had been made. It will be necessary to visit 1,200 farms to complete the work.

The fact that must impress every observer of health legislation is that every municipality of any consequence is becoming pretty exacting in saying who shall and who shall not sell milk within its limits, and that the results thereof spell profit to those dairymen who are wise enough to take heed. But there is another important phase of the situation: What reasonably pure milk, and its intelligent use, can do for babies is strongly illustrated in a report of the Babies' Welfare Association in New York, just made public. From January to November, only four in 1,000 of the 33,000 babies under two years of age enrolled in the 55 milk stations died; and many of these babies were sick with digestive troubles when enrolled. Yet among all the babies under two years of age in this city, the death rate during this time was 75 in 1,000. One thing strongly brought out in this report is the fact that wholesome milk is obtainable, even for the poor, if only intelligent means are used to bring this about.

This brings up the wonderful work of the New York City Milk Commission, whose wide field has been almost nation-wide, and the results of whose labors have had a beneficial effect upon dairymen, bottlers, venders of the lacteal fluid, and boards of health, everywhere. This Commission consists of 17 experts, selected from various parts of the country, and milk legislation in many places is founded on its decisions. The chairman is Dr. W. A. Evans, professor of preventative medicine in Northwestern University. Dr. John F. Anderson, director of the hygienic laboratory of the United States public health service, Washington, is vice-chairman. Chester H. Wells, health officer of Montclair, represents New Jersey. Among the recommendations made by this commission as a means of protecting public health are pasteurization of milk, grading and labeling all milk with its grade, date of production and date of delivery to the consumer.

It is but a step from the question of state milk inspection to that in which the national government enters. With the exception of a certain quality of first grade milk, which has been protected against infection in some other way, pasteurization is sanctioned by the commission, which lays down rigid rules for the tuberculin testing of cows, inspection of employes and sanitary condition of dairies to determine what milk may be excepted. And it is provided that the milk must not contain more than 100,000 bacteria to the cubic centimeter when it reaches the consumer. The commission, however, records itself as agreeing with the U. S. Department of Agriculture, in the contention that milk containing a few disease germs may be dangerous, while other milk may be high in bacterial count and still be only dirty, old, or have been held at too high temperature. Bacterial count, nevertheless, is held by the commission to be the most practicable means of determining whether milk is safe or dangerous to use. As a means of commercial pasteurization, it is recommended that milk be held at a temperature of 140 degrees, Fahrenheit, for 30 minutes; this preferably to be done in the final container.

The grades of milk recommended are four. Grade A, when sold raw, must come from cows free from disease, as determined by tuberculin tests and periodical physical examinations by qualified veterinarians, must be handled only by employes who are regularly examined by qualified physicians, and dairy and shipping conditions must be such that the milk shall not contain more than 100,000 bacteria to the cubic centimeter when delivered to the consumer. Grade A, pasteurized, shall come from cows free from disease and must at no time contain over 200,000 bacteria to the cubic centimeter. It must be pasteurized under official supervision and have a bacterial count of not more than 10,000 when it reaches the consumer. This is considered safe for infant consumption. Grade B milk must come from cows passed on at least once a year by qualified veterinarians, must never contain more than 1,000,000 bacteria, and must not show more than 50,000 when delivered to the consumer. This is advised for adult use only. Grade C milk, used for cooking and manufacturing purposes only, and careful restrictions by law of its sale are recommended, differs from grade B in having over 1,000,000 bacteria at the outset.

Announcement has been made of the prosecutions of 93 dealers in various parts of the country for violation of the Federal pure food law. The government recognizes this problem of pure milk as most important in affecting the public health, but restricts its inspections to that milk only which enters into inter-state shipment, and for this reason, it will always be necessary for state and municipal authorities to conduct individual examinations into local milk supply. The government's requirement is that there shall be 11¾ percent of solids in milk, of which 3¼ percent. must be fat, and 8½ percent. of non-fat solids. In other words, the percentage of water must not exceed 88¼ percent.

The government's requirements say nothing about the number of bacteria contained in a cubic centimeter of milk. This important matter is left for the judgment of the courts before which these precautions have been brought. In all cases, however, the prosecutions have been based on the excessive amount of dangerous bacteria found in the milk, and in those cases where fines were imposed, the milk was considered adulterated for the reason that it was "composed in part of filthy, decomposed and putrid animal substances."

The government milk experts believe in making sanitary the places which are the source of milk supply. Farmers are encouraged to keep the best stock that their money will buy, same to be tuberculin tested, if possible; to maintain clean stables, with modern equipment and sanitary utensils, cooling and storage facilities, and to adopt careful methods of handling milk from the time it leaves the cow until it reaches its final market.

The National Government, like the individual state and the separate municipalities, is hampered by insufficient funds. A recent investigation by Ernest Kelly, the expert in charge of the government's market milk investigations, revealed the fact that but 4.14 cents a year per capita is all that is spent for milk inspection in the United States. Mr. Kelly's investigation was fruitful in other ways. He found that the standards for bacteria ran all the way from 25,000 up to 1,000,000 per cubic centimeter. Thirty-three out of 66 reported 500,000. Fat standards ranged from 3 percent to 3¾ percent; 51 cities out of 122 requiring the smaller amount. Total solids showed an even greater variation, running from 10.62 percent up to 13 percent. Mr. Kelly states that pitifully small sums are appropriated by city councils and state legislatures to push this campaign of education. Last year 22 cities reported that they had spent absolutely nothing for such work. One city spent one-tenth of a cent per capita per year, while the highest reported was a little town in Georgia which spent 19 cents per capita per year. Only 43 of 162 cities spent 5 cents or more per capita.

The investigation disclosed that milk inspectors are poorly paid, the position being oftentimes given as a reward for political services. It seems to me that all milk inspectors should be appointed only as the result of a civil service examination. Mr. Kelly says bacterial count is not a complete safeguard. A sanitary inspection is absolutely necessary to ascertain possible sources of contamination; and the farmer needs instruction in improving conditions.

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Poultry

THE FEEDING PROBLEM

The feeding question offers a large field for study. A perfect ration has never yet been found.

Just to indicate how impossible it is to compound a perfect ration, let us look at this problem as it confronts us during October and November, assuming warm weather for October and cold for November. The carbohydrates of any foods are the fuel supplying or heat producing agents. They are to the body what wood and coal are to the stove. On a cold day it is necessary to put twice as much fuel in the stove as on a warm day. In like manner also it would seem that fowls must devour twice as much carbohydrate matter in cold weather. Theoretically this would be true but in reality it is not. Food contains protein matter besides carbohydrates and the consumption of twice as much food would involve twice as much protein as well as carbohydrate matter, which would entail a double burden on digestion; and digestion is able to do only a certain amount of work in converting carbohydrates into fuel and protein into flesh. We can not figure on carbohydrates in a ration without taking proteins into consideration also and it is in maintaining a proper balance between these two that the dificulty presents itself.

ANCONA BABIES READY FOR A BUG.

It is in the rapid changing weather that the problem presents itself most forcibly during the periods in the fall and spring, for instance, when one day is cold and another warm. How can chickens be made to lay steadily thru such variations of temperature?

According to Prof. Rice a hen or pullet with a surplus of fat is the best layer. If this be true, it goes to show that the carbohydrates constitute the limiting factor in the relation of feeding to weather variations. Instead of the fowls having to eat twice as much grain to meet the double amount of carbohydrates necessary in cold weather they can consume the same amount of food and draw from the surplus fat on their own bodies. On warm days this fat is stored up and on cold days requisition is made upon it.

The Leghorn hens are not as good layers in cold weather as those of some other varieties. The Leghorn is more active by nature and hence does not put on much fat. Being shy in feathers, the Leghorn uses up surplus energy in supplying its body with warmth. This is the explanation also for heavier breeds of hens becoming fat in warm weather.

It is to overcome some of the obstacles and difficulties already presented, that different methods of feeding are necessary. Leghorns are given more corn in rations than loose feathered breeds, because corn contains a large amount of carbohydrates. The heavier breeds, however, receive less. For them oats is substituted largely for corn in warm weather, because oats contains less carbohydrate matter.

The question is sometimes asked "Why do pullets not get as fat as hens?" Two reasons may be assigned for this: (1) hens are less active than pullets; (2) they lay fewer eggs, and thus there is not so great a drain in this direction, records showing that only in rare instances will a bird lay more in its second than its first year, and it is impossible to make an active fowl take on fat to any great degree while it is laying. It is true also that some fowls, probably of the better breeds inherit a susceptibility to fat making.

Last fall I had some early hatched pullets that seemed to be fat and heavy, so much so that I began to question their ability as good layers. I kept on feeding them, however, until they were 7½ or 8 months old. There were only five in this lot but three of them laid over 200 eggs. The entire five have been steady, excellent layers, due, no doubt, to the fact they carry an extra amount of fat for emergency. The lowest record out of the five is 169 eggs.

The claim has been made that the lean fowl becomes broody because of an inclination to take on fat. Our experience inclines as to the belief that the bird which has been on the nest for three weeks is leaner than when it began, and in lots of cases will lay in a few days after coming off the nest. A hen will not sit, no matter how lean she is, if she does not feel like it. One breeder claims that by selection he has secured a strain of White Wyandottes fifty percent. of which never show an inclination to sit. The Leghorns are supposed to be "non-sitters" but instances are known where hens of this breed have become persistent sitters. Feeding does not have anything to do with the sitting propensity of a hen.

We do not agree with the claim made by some, that hens are capable of selecting their own diet, but believe they will consume anything that is given them if it is palatable. Experiments carried on by the Missouri Experiment Station show that birds which were allowed to help themselves to about 32 different kinds of feed were in the lead during cold weather, but dropped very decidedly in hot weather.

To get good results in poultry feeding one must follow natural laws. Variety of diet is as necessary to fowls as to human beings in order to produce the best results. Corn, wheat and oats are their favorite grains. From these three grains and beef scrap, combinations may be made for mashes and grain mixtures.

The safest way to feed is to find some known and tried farmula and stick to it. A bird in the hand is worth two in the bush and if you get eggs in abundance on the food given, be satisfied and do not change.—C. VanHorn Jr., Delaware Co., Pa.

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Enclosed please find $1.00 and a subscription blank with two new subscribers. Please extend my subscription for another year. Pennsylvania Farmer is a welcome visitor in our home each week. I have recommended your paper to a number of persons who are now subscribers and who also like the paper very much.—E. S. Stover, Bloomfield, N. J.

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Live Stock

COST OF HORSE LABOR

Those past masters of horsemanship, the Arabs, have a saying that "rest and fat are the greatest enemies of a horse." The Germans have an old proverb to the effect that "the eye of the master fatteneth his cattle." Feeding is not an exact science, but will ever remain more or less of an art. No two horses, like no two persons, require the same feed or the same amount of feed. Individuality must ever be taken into consideration. Some horses are proverbially easy keepers while the long, rangy, slim-bellied kind are proverbially hard to keep. The ration must be made to fit the individual animal and for the ration to fit the individual animal, the feeder must ever be on the ground and use common sense, must watch his animal, know how he responds to different feeding and varied care. An old Englishman once told me that our American animals do not see enough of their masters to even recognize their breaths. In this saying, there is a great deal of truth for few of us are about and around our animals enough to know them as we should. Good, clean, comfortable, well-ventilated quarters will go a long way in keeping our horses in good condition. Good grooming must be taken into consideration. People have said that grooming reduces the cost of keeping horses as much as one-fifth to one-fourth, and when you see the rough unkept coats of many animals you believe that there is more or less truth in this respect as the animal which is sleek, active, alert and willing is always the well kept horse.

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We can not feed horses in accordance with any set rule as to just how much or how little to feed. Most of us would do well to give less than at present. All of us can cut down feed bills by watching the markets more closely, substituting cheaper for more expensive feeds in accordance with market fluctuations. Nearly all would do well to pay more attention to the protein content of various feeds especially when feeding brood mares and growing colts. Feeding straw or fodder to idle horses in winter means an enormous saving while cutting down the ration of idle horses at least one-third means a proportionate reduction in bills with horses in better shape to withstand the season's work. Good clean, comfortable quarters coupled with good sensible care can not be left out of consideration.

All these factors, combined with a better distribution of horse work, the maintenance of no needless horses, the keeping of mares and the growing of colts will enable us to obtain each hour of labor from our animals at a far less cost than formerly. This will cut down the largest single item in the operating cost of our farms to a material extent and in the end will mean that we can raise a bushel of oats or a ton of hay for less than before.—C. W., Crawford Co., Pa.

SKIM-MILK FOR YOUNG PIGS.

As indicating the value of skim-milk for pigs my experience with 13 pigs bought from a neighbor may be interesting. On May 19, I sold my hogs that weighed 226 lb. each and bought 13 pigs weighing 108 lb. each. I am reminded of the old question of when a pig becomes a hog, as the "pigs" bought were the same age as the "hogs" sold. The "pigs" had been wintered on corn, corn, nothing but corn, while the "hogs" had been fed a liberal amount of skim-milk in connection with a moderate amount of corn. The balanced ration made more than double the amount of pork that was made by the one-sided ration and at a less cost. In fact my neighbor admitted that he would have made money by giving his pigs away at weaning time. He was "short" on cows and "long" on corn; but the corn fed was worth more than the pigs at 7 months of age.

When the 13 pigs came to my place their corn ration was reduced about a half. They got an abundance of milk and a fair amount of grass; they were never allowed out of an orchard of about an acre. The first eleven days these pigs gained 40 lb. for each bushel of shelled corn fed. Their long-continued corn diet had made them glad for a change of fare and it seemed that there was a place for all the protein that they could devour. It was not expected that a 40-lb. per bushel gain could be kept up until selling time.

At 8¼ cents the 13 pigs cost $115.50 on May 19. I sold 9 July 28 weighing 1,670 lb. at 9¼c., making $154.22, and the remaining 4 on Sept. 15, weighing 1,040 lb. at 8½c., making $88.15. Total receipts were $242.37. They ate 50 bushels of corn that was bought in May at 64c. There was a profit, due in part to advancing prices, of about $95. The most interesting part of the experiment is in reference to the gains. No one can expect to be certain about prices; so that buying both hogs and corn to feed them may or may not be profitable. But the feeding problem is one in which the element of chance plays but a little part. These pigs gained 1,310 lb. on 50 bushels of corn in connection with skim-milk, for which there is no market excepting when fed to live stock. I have had higher gains beginning at weaning time.

Recently a neighboring farmer told me that he had failed to get much good from milk as a pig feed. He had put two equal lots of pigs in clover pasture, one lot getting milk, the other none. He could see no difference in the two lots of pigs after the experiment had been carried on for several weeks. The explanation of the failure of the skim-milk to show results is that the clover pasture furnished all the protein that the pigs needed. The overplus of protein furnished by the milk was thrown away. Milk and corn make a royal combination. Where milk can not be used middlings will do very well, but it costs too much for its nutritive worth. Digester tankage, altho costing more per ton than middlings, is the cheaper feed, as has been repeatedly stated by the experiment stations and private investigators.—H. J., Chester Co., Pa.

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Philadelphia, Pa., January 10, 1914.

ROAD DRAG PATROL

Those who are following the series of articles on Better Roads Where You Live will have noticed that it gives what the name implies; methods of improving the local roads at lowest cost and with the least loss of time in organization work. Two things of greatest importance to farmers in this plan are that it provides for improvement of the business roads, those used by farmers in the every-day business of farming; and that it places responsibility for road improvement upon the most interested parties. The road question is of greater importance today than it has ever been before. The defeat of the bond issue in this state at the last election was not a check on road improvement work in this state. It was merely the termination of a road policy which was taking the actual work of road improvement farther and farther away from its natural field and returning less and less for the money invested. The farmers' road problem is right at home in their individual communities, and the greatest need in road legislation is a set of laws which will place the responsibility on the communities and encourage road building by the home people.

We are receiving communications from every part of the state indicating the interest which is felt in this subject. When the farmers go about this matter seriously, and determine upon a policy which will care for their local roads they will get results. Watch our Road Department and do your share toward working up community interest for real constructive work.

FARMERS' WEEK AT STATE COLLEGE

Farmers' Week at State College, Pennsylvania, was established in 1905. Primarily it is an effort to place the facilities of the college at the service of all the farmers of the state so that they may have actual school advantages for a week. To do this, the holiday vacation, when the regular students are absent, has been adopted as the time when the end in view can be most adequately accomplished.

Some idea of the growth of this movement and of the interest of those whom it is intended to reach may be arrived at, when it is known that at the inaugural session of the movement in 1909 185 farmers were present from 36 counties in Pennsylvania, as against 980 at the session just closed from 62 counties. The attendance this year shows a remarkable increase over that of last year of 678 from 59 counties.

It would be difficult to imagine a more comprehensive or instructive program than that followed out. Every phase of farming from soil analysis and fertilizers as the fundamentals, to marketing problems and co-operative methods, had a place and were given the attention and treatment commensurate with their importance. Theory and practice were correlated in such a manner as to give a proper balance to the work. Whenever possible and practicable, lectures were supplemented by demonstrations and in such features as apple packing, killing and dressing poultry, demonstration, care and operation of farm engines, the farmers were given opportunity for personal participation. Lantern slides illustrating popular phases of farm practice, added to the value of many of the lectures.

While members of the faculty of the Pennsylvania State College were responsible for the greater part of the program a number of practical men as well as representatives from various outside experiment stations contributed. Addresses were followed in many cases by practical discussions and questions, in order to allow an opportunity for the clearing up of hazy points.

Discussions were not confined to actual farm operations and methods exclusively. The business side of farming was given consideration and some of the general problems of rural life, religious, educational and social formed the basis for some interesting and instructive addresses. Dr. Arthur Holmes, Dean of the schools at State College, in discussing some of the problems confronting rural committees, made a plea that rural dwellers endeavor to create a "country consciousness" and that they quite endeavoring to imitate the artificial life of the cities. Along the line of educational work Dr. Holmes recommended the employment of country-bred teachers for the rural schools, instead of the importation of instructors from the cities who have no country training and lack "country-mindedness." He recommended the same qualities for the minister of the country church pleading for the country-bred, broad-minded individual and if possible the man whose desire is to confine his work to the country district.

Several features in connection with Farmers' Week are worthy of mention. The Extension Department of the Agricultural School at State College, has given much time and effort in fostering the Boys' Corn Club movement. Closely co-operating with the college in this movement the different County Agricultural Experts have been a large factor in its success. This year clubs from many different counties were present. Prizes, including a term of instruction at State College, expenses for Farmers' Week and books on Agricultural subjects were awarded. Lancaster, Mercer, Franklin and other counties were represented in the corn contest. In connection with this contest and the visit of the contestants at the college, several of them have signified their intention of returning for courses at the agricultural school.

Four boys from Lancaster County, viz: Paul B. Flory of Pequea Creek; Noah Hershey, of Leaman Place; C. C. Brinton, of Christiana; and A. C. Bruckhart, of Lititz, upheld the reputation of their section for banner productiveness by taking first, second, third and fourth prizes. To 11 year old Aleen Fell, of Transfer, Mercer County, the youngest participant in the contest, a special award of second prize for the best 10 ears of corn produced anywhere in the State, was made. Miss Fell, has been christened the "Queen of Pennsylvania Corn Growers" as the result of defeating 80 boys in her home county of Mercer, in the sweepstakes' corn growing contest conducted by County Agent McBride. Her accomplishment of almost 98 bushels of shelled corn from a single acre, during a season of dry weather and early frost is most noteworthy. Those in attendance at Farmers' Week were honored by Miss Fell's story of how she had accomplished her feat.

Domestic science as applied to the farm home and the proper equipment of the home to insure ease of housekeeping operations received special attention from authorities on these subjects.

Significant of the interest which is being aroused in agricultural lines was the degree of intelligence represented by the class of those in attendance. Farmers and practical men in all lines of agricultural work, school principals, and county superintendents mingled with each other, arguing well for coalition of the interests represented by each class and a sympathetic communities.
the educator, and those interested in social and economic conditions in rural understanding between the farmer and

Of special significance, also, was the large number of those of the younger generation who were present, and the increase over previous years in the number of women, indicating how infectious is the desire for the acquisition of knowledge along just such lines as are covered in the Farmers' Week program.

The lack of equipment and the crowded conditions under which the agricultural school of the college is laboring was never more strongly emphasized than during the sessions incident to Farmers' Week. Most of the sessions were held in crowded rooms, of necessity, and in some cases even standing room was at a premium.

Following Farmers' Week there is being held at State College a conference of high school principals and educators, for the purpose of pursuing short courses in agricultural work. The County Agricultural Experts are also holding a two weeks' conference devoted to lines of study on which they are desirous of having special instruction.

That Farmers' Week this year was preeminently successful, goes without saying. To Dean R. L. Watts and Prof. M. S. McDowell of the Extension Department belongs much of the credit for the planning and carrying to completion of the program.

STATE CAPITAL NEWS

Traction License Questions.—Enforcement of the new automobile license law, which regulates traction engines for the first time, is proving to be more or less of a problem. It is probable that the next legislature will be asked to make some changes. The provision that cleats must be not over an inch and a half has cause a flood of protests, but the officials take the position that as long as it is the law it must be enforced. People responsible for the law say that if larger cleats are used it will make trouble for roads. Another objection is that the traction engines are paying double tax, being taxable as personal property and also being subject to a state license.

Automobile Rush.—The rush for automobile licenses is keeping officials on the jump. About 28,000 have been issued. It is noticeable, say the people at the department, that the issuance to people living in rural districts is greater than in the early rush of last year. In 1912 and 1913 the early demands came almost axclusively from the cities and towns, but this year a good many farmers are having their machines entered early. It is estimated that 10 percent more cars are being registered from the country than last year. Unfortunately there is no way of accurately stating how the cars are divided until the lists are made public.

Soil Study Encouraged.—A new feature of work at the farmers' institutes and moveable schools is encouragement of the study of the soils. Lecturers are giving this much attention and are pointing numerous instances where farm owners have benefited from scientific examinations of their soils.

Schools Well Attended.—Director A. L. Martin, of the farmers' institutes says that the attendance at the farmers' moveable schools, which have been held thus far in the western end of the state, has been greater than expected and that the sentiment is much in favor of an extension of that form of educational work among the farmers. It is thought that owing to the popular interest a greater appropriation will be made available in 1915. The lectures at these schools supplement what is taught at the institutes and lead to practical demonstration wark.

Uncertain About Highways.—State officials appear to be more or less uncertain about the highway work for the coming season. In three months the time for repair of the roads will be at hand and as many have been allowed to run down because of lack of funds the chances are that there will be many highways which will be in need of improvement. Officials of the State Highway department say very plainly that unless the money from the licenses of automobiles can be made available there will be a curtailment of work and that much accomplished last year will be lost. It is unfortunate that so much time has been lost in the settlement of this question as it will be well into spring before the courts determine whether the income from licenses can be used for road work or not. Incidentally, it ought to furnish the legislature with an incentive to make laws so that there can be no doubt of their meaning or else oase appropriations on revenue about whose disposal there can be no controversy.

The Oleo License Rush.—All records for the issuance of oleomargerine licenses have been broken and it is expected that before the end of the month fully 1,500 licenses will be issued. The increase in the demand is attributed to the desire of merchants to handle the oleo trade for which there is more market now than for butter. In 1913 the state issued about 1,900 licenses and received more money from that source than ever known before. The prosecution of persons who sell without a license is being carried on vigorously and probably 50 such suits are now pending in the courts. Between oleo and cold storage the dairy and food division appears to have its hands full this winter.

Liability Law Soon.—People at the Capitol are voicing the belief that the next legislature will enact an employers' liability bill on a state insurance basis, much as was proposed by those who stood out against the drastic law proposed by the state commission. It is understood that the commission, which was reappointed, stands by its former bill, but this is recognized by almost everyone else as impossible of passage because of the right and left way in which it would hit. There is not so much opposition to a liability law thruout the state as there is to one which would work a disadvantage to the farmer and the small manufacturer. It is all right to have such laws for large employers of labor, but to put them on a plane with the tiller of 120 acres or the employer of four men appears to everyone but members of the commission to be more or less unfair.

School Legislation.—As a result of the recent meeting of the State's teachers at Pittsburgh, steps will be taken to draft bills for the next legislature which will afford means of working out pensions for teachers and of bringing to legislative attention the urgent necessity of providing money for small districts to enable them to give the educational advantages which the law demands. The teachers' pension plan will probably be one which will enable the state to make an appropriation, leaving the administration to the local district or county, which must also give a share. As to the equalization plan, all that needs is public sentiment.

Educational Salaries.—Dr. Nathan C. Schaeffer, state superintendent of public instruction, devotes considerable attention to the smallness of the salaries of the public school teachers. Thruout the state the average increase in the salaries of male teachers per month was 78 cents and of women 28 cents. When one considers what teaching means, it seems rather singular that the state so lavish with its charitable appropriations and liberal with means for public works should be unable to add more to the monthly stipend to the educators. Dr. Schaeffer points out that the increases are entirely too slow in coming. It is probable that next legislative session there will be an effort made to advance the state school appropriation from $15,000,000 to $20,000,000 for two years, tho additional $5,000, 000 to be for the teachers' salaries.—Hamilton, Harrisburg, Pa. Jan. 5th, 1914.

NEW JERSEY FARM NEWS

The Scully Waterway Bill.—Congressman Thomas J. Scully, of this state, has introduced a bill in the House of Representatives, making provisions for the construction of a canal across the state to connect the Delaware River with New York Harbor. The link is to be completed within eight years, and will form a part of the Atlantic Coast Inland Waterway. Leading farmers and farmers' organizations in this state have been advocating such a canal for several years.

Crops Show Normal Increase.—The cereal crop in New Jersey comprising the corn, oats, rye and winter wheat yield, totaled 15,560,000 bushels this year, as compared with 14,945,000 bushels harvested last year was worth $10,297,000. Ground planted in cereals this year totaled 260,000 acres, or 4,000 more than were used in 1912 for that crop. Concerning the winter wheat now planted in New Jersey, there are 83,000 acres, of which 95 percent were found to be in perfect condition at the December inspection. Winter rye was planted in 79,000 acres this fall, and the examination showed the condition of the crop to be 96 percent perfect. In 1912, 1,000 less acres were sown in rye, while the acreage planted in winter wheat was the same this year as last.

The Oyster Industry.—In this state there are 40,000 acres of ground in use for oyster planting, with nearly 10,000 men engaged in the industry, the output being worth $4,000,000 a year. Chief Charles R. Bacon, of the State Bureau of Shell Fisheries, renews his recommendation of last year for a merger of the oyster commissions into a single body, but to remain separate from the Fish and Game Commission.

Forests Should Be More Profitable.—The State Forestry Commission estimates that the 2,000,000 acres of forest land in New Jersey might be made to yield an annual net income of $6 per acre, instead of about 50 cents as at present. The commission shows that the German State of Wurtemburg has practically the same area, the same population, similar territory and similar interests as this state. Wurttemberg's forests yield approximately 12 times as much revenue as those of New Jersey. Other points made in this report are: Of 678 fires, 45 percent were traced to their authors and fixed as violations of the law, thus showing that violators can be reached and punished; railroads are the worst offenders in the setting of fires; purchase of forests by state will be limited, so that private owners must be depended on for most of the work in forestry; the beginnings of forestry are practiced on some 200,000 acres, one-tenth of the whole forest acreage of the state; great attention is being paid to shade trees in 52 communities.

State Libraries in the Country.—During the past year, library extension work was pressed with vigor. Eight libraries have been organized, four re-organized and one partially so. Eight granges have started reference collections in their halls, and seven new reading circles have been started in rural communities making a total of 69 such circles started under the supervision of the State Library Commission. The traveling library service has been extended to 41 new centres, making the total number of stations now served 323.

No Lecture Train.—The State Board of Agriculture and the Pennsylvania Railroad have decided not to run a lecture and exhibition train to remote rural sections of the state this year. As no train was run last year, it is probable this method of disseminating the latest ideas in agriculture will be abandoned. A better scheme of increasing freights from the farm, the farmers say, would be to reduce the rates on fertilizers and seeds. An agitation has been started for a reduction of the freight charges for lime.

School Laws Hit Again.—The new school laws seem to be in for a continual lacing. Now there are complaints that the whole educational system is based upon the needs and conditions of the large cities, and that attempts are being made to adjust the rural school to these needs. For some time there has been a cry that the system of proportioning the taxes derived by the State from the railroads—and this income has been enormously increased under the new regulations,—is not of mutual advantage to all of the schools, the rural school losing out in the ratio of allotment of the money. While the methods of taxation and of distributing school money, will in all probabilities remain unchanged, the demand for a normal school where teachers for rural schools may be trained, is a good one, and should be enacted into law.

New Use For Schoolhouse.—The farmers' institute which was held at Red Bank, was held in the auditorium of the high school building, and this was the first instance in the eastern part of the state where the schools have been used for such a purpose. The use of the high school for this meeting was in accordance with the provisions of the law past last year providing for wider use of the schools. The law gives to boards of education the power to permit the schools to be used for meetings of all kinds and for every public and semi-public purpose.

Protecting The Skunk.—A law passed last winter affords partial protection to the skunk. There is now a demand on the part of farmers, the action of a few recent meetings to the contrary, to afford the skunk full protection. Authorities say the animal is the inveterate foe of the white grub, the Kansas grasshopper, the cut-worm and the range caterpillar, and that the recent increase of these pests is due to the fact that the skunk has been almost exterminated.—D. T. Hendrickson.

NEW YORK LETTER

Farm Bureaus.—There are now 18 farm bureaus in this state in actual operation and more are organizing. The Boards of Supervisors in several counties will be asked to bear their share of the expense for such bureaus this winter. The following counties have bureaus which are in charge of the agents here named; Allegany, F. C. Smith; Broome, E. R. Minns; Cattaragus, H. K. Crofoot; Chautauqua, H. B. Rogers; Chemung, G. P. Scoville; Clinton, C. B. Tillson; Cortland, E. H. Forristall; Dutchess, F. H. Lacy; Franklin, O. F. Ross; Herkimer, M. E. Chubbuck; Jefferson, F. E. Robertson; Monroe, L. A. Toan; Niagara, E. H. Anderson; Oneida, G. W. Bush; Ononadaga, S. A. Martin; Oswego, H. M. Doyle; St. Lawrence ,C. S. Phelps; Wyoming, W. L. Markham.

Commission Merchants.—A case came up in the course of the enforcing of the new commission merchants' law that will probably require an amendment to the law to be made this winter. A commission merchant in New York inherited his father's business which had been established for 80 years. The son knew little about the business and the management was given over to an employe who soon ran it into the ground. Insolvency followed. A farmer who had shipped produce to this man could get no returns, so he took the case to the Agricultural Department. But there were no assets. The case may test the criminal liability of merchants under the law, but it will almost surely cause an amendment to the statute to govern such cases in the future.

Seed Exchange.—A seed exchange is to be established at the state agricultural school at Canton during Farmers' Week, January 26 to 31. Those who have seed of any kind to sell can have samples of it there, accompanied by a letter stating price and quantity for sale. This is done to facilitate the movement urged by Dean Cook for growing and marketing of seed in northern New York.

Various Matters—The total receipts of the state fair last fall were $135,105.71, which gave a balance of $29,327.72.—The eastern section of the state Fruit Growers' Association will hold a convention at Poughkeepsie on February 19.—Geo. W. Parnell, of Wingate, Ind., was elected president of the American Cheviot Sheep Society at Hartwick, N. Y., last week.—A penalty of $20,000 was collected by the conservation commission from a poultry company in the central part of the state that breeds wild and mallard ducks for market. They bought some down in Virginia and sold them in New York as fowls raised on the New York farm, suit followed.—The Central Y. M. C. A. of Albany announces a series of lectures on farm topics. The speakers are Edw. Van Alstyne, of the Farm Institute department; Prof. C. S. Wilson, of Cornell; Geo. G. Atwood, of Albany; Prof. Rice, of Cornell; E. D. Van Buren and John Jeannin, Jr., and Miss L. Minns, of Albany.—D.

OVER 7,000 ANSWER "HERE"

Lancaster County Farmer's Institutes, recently closed, were a series of meeting held in eight places and attended by over 7,000 people, as counted at each session. Close studious attention was the rule and not the exception. Tobacco culture, steer feeding and corn growing were live subjects for dsicussion, and many lingered for the last word on these fruitful sources of income. Steer feeding is assuming its former proportions in farm economies, as this winter there are being fed 27,000 head in Lancaster County for spring sale.

There were eager listeners at the institutes to hear the latest on truck growing, orcharding and farm poultry. A few interesting talks were given by local men. Dr. Pickle, of Millersville, discussed organized effort in selling the tobacco crop, and insists that the tobacco grower should say to the purchaser: "We are ready to sell, our price is ——, instead of meekly asking What will you give us."

Farm exhibits were many and very creditable at Maytown, Lampeter, Lititz, Paradise and Ephrata. At Maytown a poultry show of much interest was an annex. Artistic skill of farmers' wives and daughters was manifest in a display of useful and ornamental articles from quilts down to doilies, laces, jabots, etc. The greatest need now to make these institutes more popular is larger halls to accommodate the people.—D. H. Watts.

FARMERS' WEEK AT RUTGERS

Farmers' Week at the New Jersey State College was attended by about 800 farmers. The addresses covered almost every conceivable phase of agriculture, and among the experts who addressed the farmers were Dr. Carl W. Gay, of the University of Pennsylvania an authority on horses; J. H. Hale, the Peach King, of Connecticut and Georgia; Dr. Cyril G. Hopkins, the soil expert from Illinois; Edward Van Alstyne, Prof. J. C. Graham, of Amherst, and the members of the faculty of the College. Special subjects which received consideration were co-operation, transportation and marketing. State Entomologist Headlee sounded a warning against a threatened invasion of the pine beetle from European countries. This pine beetle is a recent importation, but it has been found in one large nursery in New Jersey. He says it is likely that the establishment of the beetle can be delayed, if not absolutely prevented in this country. Director Lipman, of the Experiment Station, said that the greatest interest of the farmers today is how to use lime. The older the soil is the more sour it becomes, and it is necessary to treat it with some form of lime to kill the acids.

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How to Get Better Roads.

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By Dr. DONALD McCASKEY.

Starting The Road Drag Patrol

Uncle Joe Cannon was perfectly right when he said: "The only way to get good roads is to have everybody in the towns and country educated to what the cost of good roads means. The only way to do this is to have school-house government in the town, the country and big cities—everybody shinnying on his own side."

This is the fundamental principle which underlies the road drag patrol system. It places the responsibility upon the particular road patrolman in charge of a small road stretch. Everybody living in this patrolman's community must necessarily drive over his section. All the neighbors gradually become educated to the defects as well as to the improvements in their road. They become critical and help hold the patrolman to his job, and they become road enthusiasts. That is what happened in my own community, and it was the road drag patrol that turned the trick. And what was done in our township can be done in any other of our 1,600 Pennsylvania townships; it does not matter how bad and hopeless you may consider your own home roads to be. First of all, our soil is a heavy loam. There is a goodly mixture of sticky clay scattered thru it.

The first year I applied the road drag patrol system it cost the township $30 per mile. This was my first year's service as township road supervisor. I was green at the job. I did not put the road grader on in my division of the township. In fact, I ordered it kept off. This was a mistake. I shall discuss the good and bad points of the road grader in the next article. As a general proposition it is useless to expect a simple little road drag to perfect a road that is totally undrained. In many cases it can be done but the sphere of the road drag is in maintenance and not in the realm of construction.

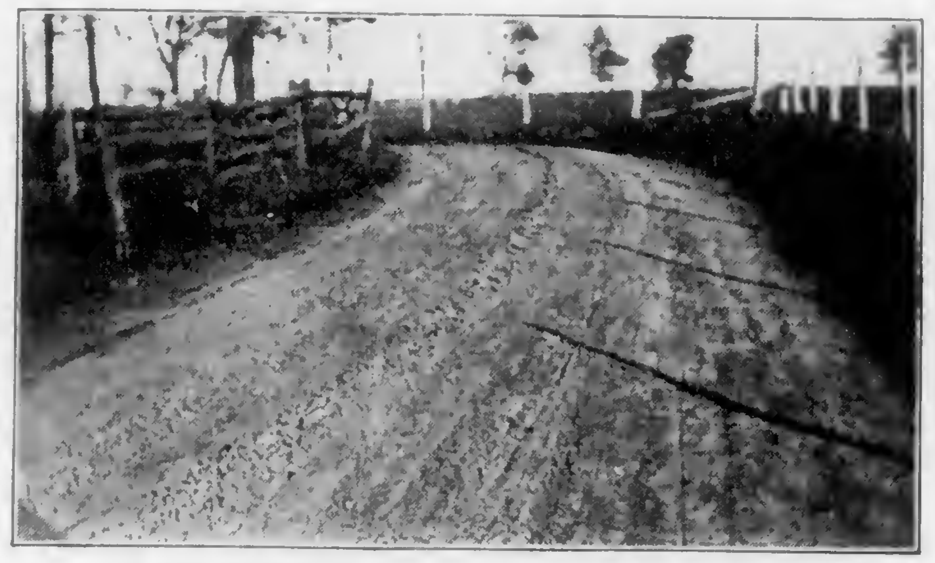
In the second year of the road drag patrol the total expense was within a few cents of $12 per mile. I could not get my two colleagues on the Board to keep any detailed accounts of their work, whereas I kept exact duplicate accounts of all expenses of all the road drag patrolmen in my Division. East Lampeter was divided into three divisions, each division being in charge of a Supervisor. I was in charge of Division No. 3. I had 20 miles of earth road which was being dragged according to contract by the farmers who lived along the roads, and who acted as road patrolmen. We paid each patrolman 40 cents per hour for his dragging. We did not care whether he used two or four horses. His job was to drag and use his wits as to the best times to get on the road after a rain, or during a thaw. He was instructed to keep dragging every day in the year if he thought his workmanship could make the road better. The matter of keeping his time was up to him. Of course a few patrolmen tried to pad their time sheets at first, but the public opinion of the community soon brought this type of workman to realize that "honesty was the best policy."

During the third year, our road patrol cost $93 to keep 20 miles thoroly dragged during the entire 12 months of the year, or a trifle less than $5 per mile. Our roadways were then profiting by the two years' previous dragging. There were no standing puddles and no deep ruts. Single-trees were not broken so often, harness repair bills were lower for the farmer and it was decidedly easier on the teams to haul produce to market. It would be intensely interesting if exact records of expenses among the farmers could have been kept during these years, as to saving in money from harness and general team repairs, to say nothing of veterinarian bills. The only practicable way that such a community record could be kept would be for 25 or 30 farmers living and traveling a patrolled roadway to keep a record of their expenses "Before" and "After". There is not a doubt that a decided saving would be found.

A few months after I had inaugurated the road drag patrol system in my Division a number of the farmers in the two other divisions hunted up my colleagues in charge of those roads and requested that they be permitted to drag their roads as official patrolmen. As a result, our township soon had its network of earth roads—42 miles of them—being regularly patrolled by 36 road dragging farmers, and our township earth roads were soon transformed to respectability. The medicine that worked the cure was road dragging thruout the entire year. Before this period our roads showed an absence of crown, an utter absence of side ditches and an utter lack of drainage except the wash gulley down the middle where the hoofs of the horses had worn a trail. After three years the road drag patrolmen had brought about a good contour, a firm foundation, good side gutters which absolutely prevented sink holes and seep-spots.

The road patrol had worked a transformation. The constant care during the entire twelve months of the year had kept the moisture out of the middle of the road. There was little water to freeze during the cold weather and the road's foundation was not greatly disturbed by thawing. Of course, some patrolmen were more earnest, conscientious and intelligent than others. You will find such conditions prevailing wherever human labor must be employed, but persistence won, and what was accomplished here can likewise be accomplished in any other county of our Keystone State. Even the sections of the more careless farmers were in passable shape for nearly the entire year, whereas the neglected and undragged roads outside of the township were in the distressing condition so well known to all of us.

As regards permanency, it is asking too much of a King drag to absolutely perfect an undrained road. It is a most suprising thing, however, to see what the drag actually can do towards improving and maintaining an already drained road. It is not necessary to wait for drainage, however, before using the drag. It can never do anything but good except when the ground is sticky. During this stage you must keep off the roadway unless tests show that the soil of your community will be improved by dragging at such times. The quality of soil must be considered in working the road drag, and in considering this it is well to remember that the best and quickest way to learn is to go ahead and try things out. If you do not experiment you will never know. Let me urge every Pennsylvania Farmer reader who wants prompt and good road improvement in his community to drive a road drag. Get on the drag yourself. Start in to drag, no matter how rough the road. Learn how first. If the rear slab flies up and throws you off, get your wife out to help you. She can do as my wife did. She can sit on and help hold down the rear slab until you learn how to manage the tool yourself. Our wives and daughters interested in the modern suffragette movement need not confine their activities to politics. They can easily learn to become road drag suffragetts. My wife tackled the job and has won out.



SHORT STRETCH OF DRAG PATROLLED EARTH ROAD.

The chief drawback to the road drag is its simplicity. Lots of men start to work a drag and for various reasons get tired or discouraged. These men oftentimes make first-rate road patrolmen if they are properly encouraged and shown how to do their work and a proper incentive is offered for their interest and efficiency. There are all sorts and varieties of drags. A road supervisor in Bradford County told me recently that he has been using two old pieces of railroad iron as a drag. The iron is joined together by one-inch iron bars, the rails measuring five feet long, and the whole drag weighing between two and three hundred pounds. While I am firmly opposed to so much weight in a road drag, this one has the advantage in that it never wears out. But I would rather wear out a light wooden drag that can be pulled easily by two horses, once every two years, than make my team pull so hard dragging such an excess weight.

There are makers of other forms of iron road drags. Each man who drags a roadway will find a preference. Personally I like the light chestnut wood drag the best; one having its slabs about five feet long. Very often a smaller drag, with three-foot slabs, can be used to good advantage in working in the side gutters. It will all depend upon the kind of dragging you want to do and where you must do it. When you learn how to prevent your drag from catching on a stone or in a rut and when you learn how to hang on and at the same time drive the team so as to make the drag cut off a little here and drop a little earth there, as needed, things will go easily. By learning the trick from the beginning, and studying how to make your drag do better and better work, you soon become very expert in its use. The usual fault with a man who starts to drag is that he just stands on and does not study how to throw his weight so as to control the cutting.

"Sammy" Petershime, the Amishman whom I have spoken of in a previous chapter, has four distinct kinds of road drags. He uses each for special purposes, along certain parts of his road. It all depends on what result he wants to accomplish. Patrolman Wilmer Conrad, whose section extends one-half a mile, thought he would like an iron drag. He procured one, but promptly went back to his old-fashioned and light chestnut drag; and Mr. Conrad won the third prize of 85 1-3 points in our big township road inspection, just three points below the second prize winner and 14 2-3 points below the first. In a future article I shall describe how these road patrolmen looked after their road sections to win their respective positions in the prize road-dragging contest.

Roads are meant to be ordinarily respectable, so that we can get about over the country. Just money will not do this. It requires something more than cash. It takes a man who will get behind the thing to check matters up, to be awake to who is and who is not delivering the goods; to weed out the incompetents and to increase the responsibility and the wages of the proven workers and it requires a responsive citizenship back of this man. Each Pennsylvania Farmer reader can do a lot to get our road control back to where it can best be looked after and efficiently applied. Get your neighbors into line and organize your road efforts when your farmer clubs and public meetings are held. Cut out petty jealousies. Line up your local business men. Get your automobile club, your merchants' association, your granges and all other progressive organizations together. Band yourselves into a body of road betterment workers, with the "Eagle Eye." Inject a little fun into the job. Learn what can be done financially. Discuss what ought to be done. Decide what you will undertake. Then—stay with it, and if your local supervisors still hold off, keep after them. Get as many farmers as you can to start a road drag to patrol the road by their own farm. Get the township to pay for such service if possible. If not, start anyway. Then give all the facts to the newspapers as you actually accomplish something. Do not bother the papers until you really do something. They want news, not enthusiastic prospective plans. Keep your newspapers posted as your future road work progresses. They are 90 percent. necessary in keeping alive the good spirit of your road work, and in keeping the township folks thoroly posted as to what is what.

MARKET HAY

Farmers' Bulletin 508, Washington, D. C. states: "The demand for market hay is for better grades than those with which the market is now supplied, and the remedy for these conditions lies largely in improved meadow management, curing methods and baling processes.

Grange

McSPARRANS' GRANGE NOTES

The New Currency Law

To those of us who have not given the question of money sufficient study to become experts on the subject, it is a great satisfaction to notice that the names of so many of those congressmen whom we have known as progressive in all parties are recorded in favor of the new law. The bill was proposed as a party measure, and was engineered thru congress under the lead of the party caucus. It has not been many years since under like circumstances the bill would have received scarcely a vote beyond that of the party which was its sponsor. One of the hopeful things in present-day politics is the fact that the party is not considered the chief thing, and the policy a secondary consideration.

And while the partisan may be able to claim the new law as a party victory, those of us who are more anxious to see a helpful policy initiated than to note a party victory, have our confidence in the new measure greatly increased because so many of the men of all parties who have in the past shown themselves up-to-date statesmen lent their help in amending and formulating and passing the bill.

Because so many of the champions of the new system came from the south and west leads us to believe that it is not a Wall Street measure, in spite of the direct assertion of some of our eastern papers that such was the case. There are some who hold that the control of the regional banks by the bankers is a bad thing. I cannot feel that it would have been just to have located the control anywhere else than in the banks. The banks are required to put about $400,000,000 into these regional banks, and when they and the government put up the money they ought to have representation according to the investment; and the law allows just about that proportional representation.

There is danger that prejudice against the banks has arisen in the minds of many people because the control of our monetary system has heretofore been so largely centered in that financial underworld called Wall Street and other such gambling and stock manipulating centres thruout the country. But we dare not forget that very many banks in both city and country, I dare say a large majority of them, are splendid, honest institutions. Their directors are representative men from the district in which their business lays, and their officers are clean, keen, capable men. So we need not fear the misjudgment of the banker if the new plan will work out to the preventing of the reserves of the banks from being centralized in these stock-gambling places.

There was one thing tho, that was thrown out of the bill in conference that certainly should have remained in if the measure is to become the basis of a strong and steady currency system. That is the guarantee of bank deposits. It was in the bill as it passed the house, but lost out in the senate, and then was lost in conference. There is a move on foot, we understand to have this feature enacted later. We should insist, as farmers, that it shall be enacted. The countryman as a rule is distant from the banks, and if there is a run on the institution, he can not save himself by early withdrawal of his deposit. He needs a thoro system of guarantee of deposit which would stop these damaging runs on banks.

The only objection that seems to be offered against the guarantee is that the strong bank would have to carry the weak, and the safe be required to pay for the wildcat banking house. As to the strong carrying the weak, our observation is that runs and failures are just about as likely to come to the big, apparently strong bank as to the small and apparently weak one, and the average depositor is controlled so largely by convenience in his choice of a bank that the question of their relative strength is scarcely thought of; especially when he has no means of knowing accurately which is the strong one and which the weak, nor which will remain strong. As to the safe bank being responsible for the wildcats, what is the real fact? The stockholders in every National Bank is held for twice the amount of his stock, and of course in any sane guarantee system, this condition would still remain and there would be the same incentive on the part of the stockholders to elect efficient and honest directors and officers as there is at present. The bank examiners would still perform their work of supervision and no doubt more carefully than they do now. Not only that, but the other banks know more about the transactions of a particular bank than does the ordinary depositor, and therefore have more opportunity to correct a mistake in time, or check a policy they see in operation in another bank. The larger responsibility should therefore rest with the greater scope of information.

Then too, aside from all thought of policy expediency, there is the foundation stone of any stable banking system that the whole people must recognize: That money in bank is as safe and sure as a government bond. The people will not believe that so long as they see in the daily papers of this or that bank failing with the liabilities larger than the assets, and the depositors' money gone. We recognize the practicability of life and fire insurance and we must contend for a system of deposit insurance that will bring all money out of hiding and keep it in the channels of trade; not only when business is good and money plenty, but during those inevitable periods when the financial tension is great and the need for those hidden dollars extreme.

In the near future we want to discuss the question that is so much talked of now; namely, Special Banks For Farmers Use."—John A. McSparran.

NEW YORK GRANGE MEMBERSHIP

The New York State Grange will show nearly 3,000 new members added during the fiscal year ending October 1. About 38 new granges have been organized. The total membership in the state is now not far from 107,000.—D

Sussex County Pomona, No. 2, met at Hamburg. According to a statement by a prominent member, the subordinate granges of the county are at a standstill, so far as the securing of new members is concerned. There are plenty of members who pay their dues in order to participate in the insurance department of the organization, but who take no interest in the meetings and no part in the actual work. John H. Voorhees, of the State Experimental Station spoke on the culture of soy beans, recommending their cultivation. Delegates to various pomona granges of adjoining counties were appointed.

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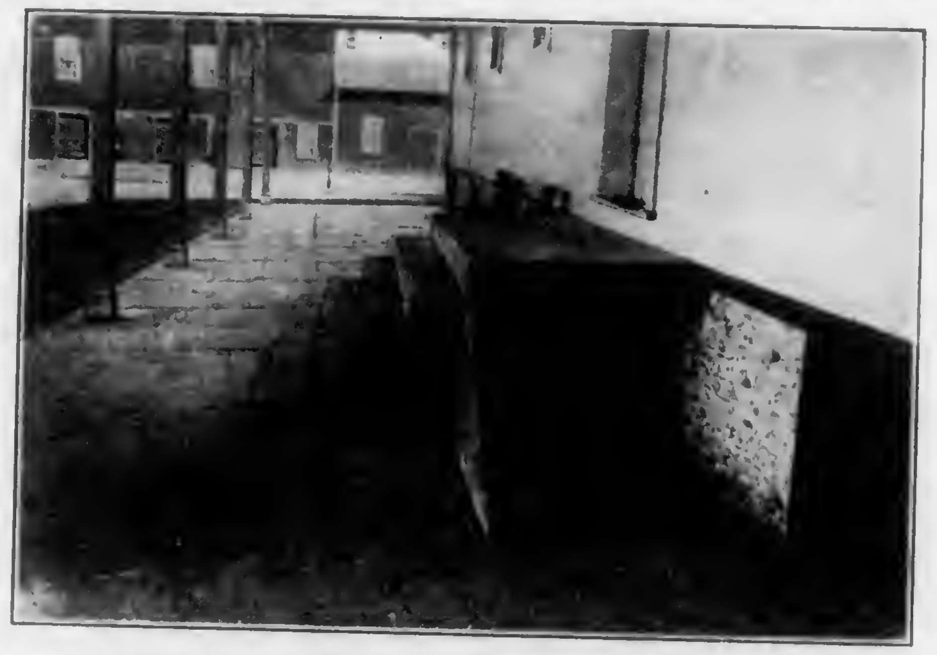
Household

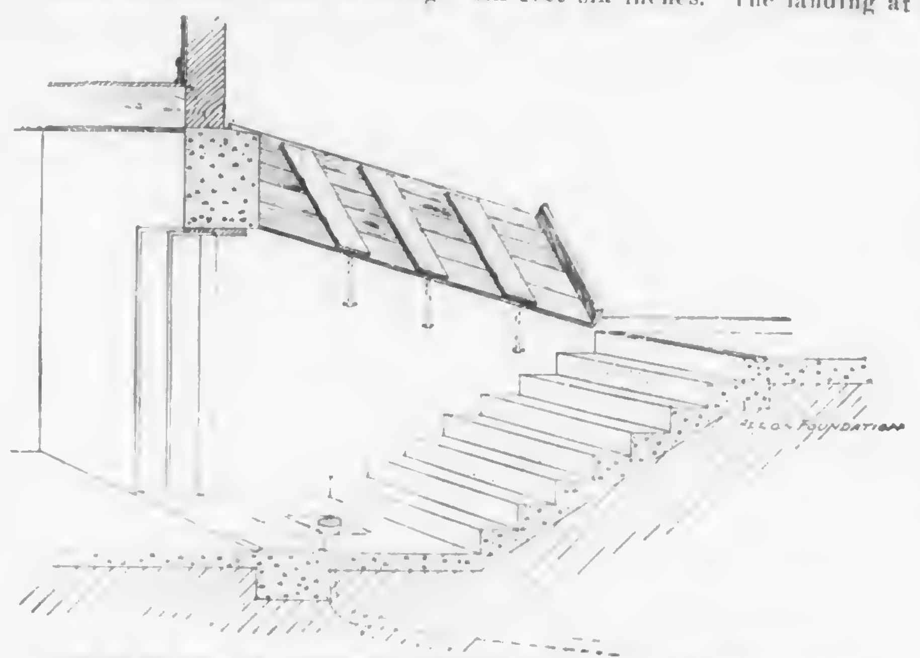
STEPS AND HATCHWAYS OF CONCRETE

An important feature of dwelling construction as it applies to the farm house is a substantial cellarway with watertight walls. It is frequently necessary to convey to and from the cellar materials that are heavy in bulk, and firm steps are essential to safety and convenience. They can be cast in concrete with ease and economy, whether designed for a new or an old building.



CONCRETE HATCHWAY CHEAPLY CONSTRUCTED AND EASILY CLEANED.

With an allowance for a three-foot landing at the bottom of the stairs, excavate the opening to the width of steps desired plus one foot. This extra width is for a six-inch thickness of concrete wall on each side. The steps themselves have a rise of six and a tread of nine inches. Beneath the steps proper is a four-inch thickness of concrete. Therefore provide for this thickness in sloping the ground upward from the landing to the top of the stairs. Extend the trenches for the side and end walls one foot below the concrete of the steps. As forms choose two 1 by 12-inch boards and notch them as though they were to be used as "horses" to support wooden steps of the same dimensions as those of concrete. Place the notched edges down with the ends fixed at the top and bottom of the stairs. To mold the rise of the concrete steps, use 1 by 6-inch boards 3 feet 10 inches long, which are secured to the forms by means of nails and wooden cleats.



CROSS-SECTION OF CONCRETE HATCHWAY, SHOWING CONSTRUCTION.

With the forms firmly fixed in position, fill the mold for the bottom step, and the space back of it, with concrete proportioned 1 bag of Portland cement to 2 cubic feet of sand to 4 cubic feet of crushed rock. If bank gravel is used mix the concrete 1 part cement to 4 parts gravel. Bring the concrete in each step to the top of the riser and finish the surface with merely a wooden float. Continue the work upward until all the steps are finished. At the top of the stairs tie the apron foundation to the side wall by means of old iron rods imbedded in the concrete and extending around the corners. This will prevent possible heaving and cracking by frost.

The side forms of the six-inch walls are then erected and are thoroly cross-braced against each other. For these forms use 1-inch siding on 2 by 4-inch studding spaced two feet apart. The walls can be carried to any height desired so as to give the cellar doors sufficient slope for shedding rain-water. Above ground line, outside forms must be provided. Fill the walls with concrete mushy wet. Before the concrete sets, bolts are placed (heads down and washered) in the top of the side walls for holding the wooden sills to which the cellar doors are hinged. After two to four days the forms can be removed. Connect up the drain in the landing and lay the landing floor.

The eight cellar steps of the hatchway shown in the plan have a tread of nine inches, a rise of six inches and a length of four feet. The clear height of the door-way in the cellar wall is six feet six inches. The landing at the foot of the steps is three by four feet and has a four-inch concrete floor. This same thickness of concrete lies under the steps proper. The side walls were built as described above. For this improvement there were required the following quantities of materials.

Bill of Materials.—Crushed rock, 2¼ cubic yards; sand, 1¼ cubic yards; Portland cement, 12 bags.

For improving old cellar hatchways it is frequently necessary to fill with earth and gravel so as to provide the earthen slope for the concrete steps. Such filling must be thoroly tamped into place and should be water-soaked and allowed to settle before the steps are built.

Concrete steps, unlike other kinds, become stronger with age. They are perfectly safe under the heaviest of loads. Moreover, besides being water-tight, they keep out rats, mice and other obnoxious vermin.

NUTRITIVE VALUE OF NUTS

Marion Harris Neil

Nuts are not generally used in cookery as they should be, for they are admitted to rank high as brain and nerve foods and thus furnish a valuable contribution to the comparatively limited range of vegetarian dietary. Bulk for bulk they are among the most nutritive foods we possess. They contain 15 to 20 percent nutritive qualities and 50 to 60 percent of fat. No other vegetable substance is as rich in fats. They are as rich in nutritive value as butter and decidedly more economical. Nut butter contains proteid as well as fat, and therefore is compared to cream rather than butter. Today everyone knows or ought to know, that nuts must be eaten with salt to assist in their digestion. Then, if thoroly masticated, they may be eaten raw by almost anyone, while cooked in an infinite number of ways, they add variety as well as piquancy to the dietary.

Peanuts afford twice as much nourishment as beefsteak, rice, beans, or cheese, and eight times as much as potatoes. Next to the peanut, which, accurately speaking, is not a nut at all, but a member of the nutritious "pulse" family, is the chestnut, which is so starchy as to be almost a bread. Chestnuts are used in soups, sauces, purees, forcemeats, entrees, and all manner of sweet dessert dishes. Fresh sweet almonds are exceedingly nutritive, but as the outer brown skin sometimes causes irritation of the bowels, they are far more digestible when blanched. This is done very quickly by covering the nut meats with boiling water, letting them stand for four minutes, then rubbing off the brown skins between the thumb and forefinger. When dried and salted in the oven, the almond makes an excellent digester, three of them carefully masticated frequently relieving indigestion from other causes.

Next in nutriment value are the hickory nuts, pecans, and English walnuts. The black walnut, which is stronger in flavor, is growing in favor for cakes, pickles and salads. Pistachio seeds or nuts are now being imported in increasing quantities. At first their use here was restricted to the coloring and flavoring of ices, creams, and candies, but now the little green kernels inclosed in shell-shaped covers are roasted in the oven with salt, then used on the table as digesters. The great fondness of the Turks and Greeks for these nut seeds is said to be the reason why they were so slow in making their way into commerce.

Some Recipes

Almond Soup.—Blanch and pound a quarter of a pound of almonds, then boil for one hour in one and a half pints of white stock, one teaspoonful of whole pepper, one sliced onion, one head of celery cut into small pieces, then rub thru a sieve. Blend together in a saucepan one heaping tablespoonful of butter with one tablespoonful of flour. When smooth, add gradually one and a half pints of milk, stir till boiling, then add the stock and one teaspoonful of salt and allow to heat. Put half a cupful of cream in a tureen and then add the soup to it and serve at once.

Walnut Cake.—Cream half a cupful of butter with two heaping tablespoonfuls of sugar, then add the yolks of two eggs well beaten with a little water, add seven heaping tablespoonfuls of flour mixed with one teaspoonful of baking powder, two tablespoonfuls of chopped walnuts, one tablespoonful of chopped almonds, and half a teaspoonful of pistachio extract. Bake in a flat, round, or oblong cake tin in a moderate oven till a light golden brown color. Heat half a gill each of milk and cream, the well beaten yolks of three eggs, and three tablespoonfuls of sugar. When this is quite hot (but not boiling), lift the pan from the fire and stir in the stiffly beaten whites of the eggs and four tablespoonfuls of finely chopped walnuts. Cover this cake evenly with this mixture, then put in the oven till set.

Hickory Nut Cake.—Cream half a cupful of butter with three-fourths of a cupful of sugar, then stir in the stiffly beaten whites of three eggs, and beat till light and smooth; add half a cupful of milk, and one and a half cupfuls of flour, alternately, then add three-fourths of a cupful of chopped hickory nuts, one teaspoonful of cream of tartar, one teaspoonful of vanilla extract, and half a teaspoonful of baking soda dissolved in a little milk. Mix lightly together and pour into a well buttered and floured cake tin and bake in a moderate oven.

PENNSYLVANIA FARMER PATTERNS.

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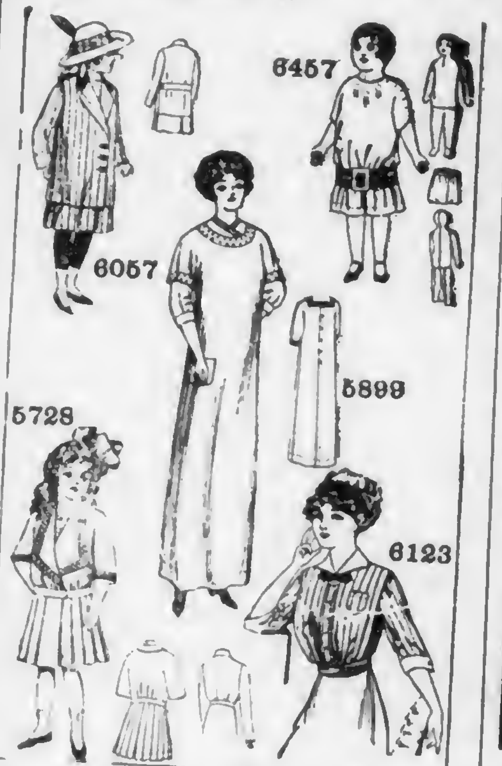


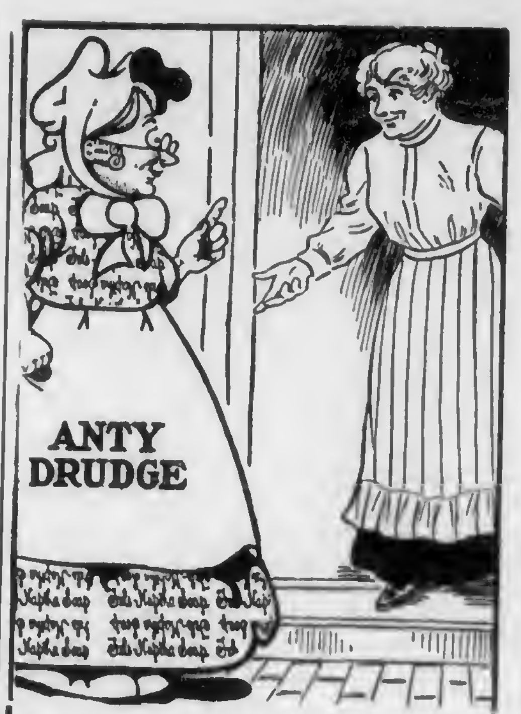
6057—Girls' Suit.—Cut in sizes 6 to 12 years. Age 8 years requires 3¾ yards of 36-inch material and ⅜ yard of 24-inch velvet. Price of pattern 10 cents.

5899—Ladies' Work Apron, with or without Seam at Front.—Cut in sizes 32, 36, 40 and 44 inches, bust measure. Size 36 requires, without front seam, 5¼ yards of 36-inch material. Price, 10 cents.

6457—Rag Doll with One-Piece Dress and Bloomers.—Cut in sizes 16, 20 and 24 inches long. To make the doll in the 20-inch size it requires ¾ yard of 36-inch material. The dress and bloomers require 1¼ yards of 36-inch material and 1 yard of ribbon. Price, 10 cents.

5728—Girls' Dress.—Cut in sizes 6 to 12 years. Age 8 requires 3⅜ yards of 36-inch goods, with 2⅜ yards of braid and 2¼ yards of insertion. Price, 10 cents.

6123—Ladies' Shirt Waist.—Cut in sizes 34 to 42 inches, bust measure. Size 36 requires 2¼ yards of 36-inch material. Price, 10 cents.



Mrs. Comfield: "Good afternoon, Anty. Come in. I was just having a laugh to myself remembering what Tom read to me this morning while I finished my washing. It was about an old rooster leaning up against a tree, saying to himself 'Only an egg yesterday, and a feather duster tomorrow.' I remember that's just about as hopeless as I used to feel before you told me about Fels-Naptha Soap—but I'm a different woman now!"

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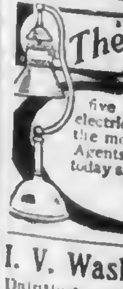

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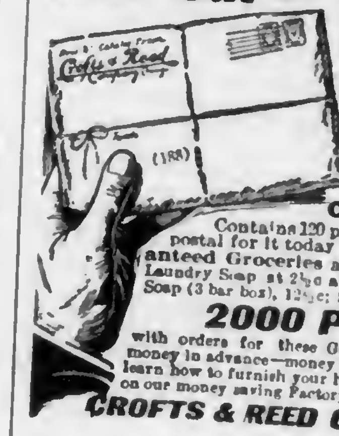

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Winston of the Prairie

By HAROLD BINDLOSS

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SYNOPSIS OF PREVIOUS CHAPTERS.

Farmer Winston, having failed as a homesteader, desperate, accepts a proposal to simulate Lance Courthorne, an adventurer. Courthorne and his pals are thus able to carry thru some smuggling operations. In the clash with the police, Courthorne kills Trooper Shannon, leaving evidence pointing to Winston as the murderer. The scene shifts to Silverdale, founded by Colonel Barrington. The Colonel is worried over wheat operations and the coming advent of Lance Courthorne, cousin to Maud Barrington, niece and ward of Colonel Barrington, to claim his share of his father's estate. Maud Barrington is told of Courthorne's past misdeeds. Winston, meanwhile, has pushed on to Montana, being held and later released, for lack of evidence, by a government officer, who discloses the belief on the part of the police, that Winston is the murderer of Trooper Shannon. A letter for Courthorne is opened by Winston. Complying with instructions therein, he meets and confers with a lawyor respecting Courthorne's inherited acres at Silverdsle, and following out his role as simulator of Courthorne, goes to Silverdale and is there received as graciously as could be expected. Some of his actions fail to tally with Courthorne's reputation. He wins the good will of Dane, one of the Colonel's advisers. The real Courthorne, who was supposed to have been drowned during the smuggling adventure, now reappears in Montena, insdvertently learns of his inheritance, and pieces together conclusive evidence that Winston has gone to Silverdale. Courthorne and Ailly Blake, whose life he has blighted, agree to ignore each other's identity. Winston and Maud Barrington, caught by a blizzard while driving to Silverdale, find shelter in a deserted shed over night, where he acts the part of a considerate gentleman. Maud Barrington promises Winston to sow her land in wheat the following spring. Under criticism from the Colonel, Winston begins planting operations. He is commended by Maud Barrington for successful efforts to break the gambling habits of Ferris, a young Englishman, a task undertaken at her request. Courthorne now appears and Winston contracts to advance him money, provided he absents himself immediately. During a fire which threatens the wheat fields Winston is injured. Suspicions point to Ferris as the incendiary. The present instalment continues a discussion as to the best course to pursue with Ferris.

CHAPTER XVII.—(concluded).

"No," she said. "For the sake of the woman who sent him here we must stop short of that."

Then Maud Barrington looked at them both. "There is one person you do not seem to consider at all, and that is the man who lies here in peril through Ferris's fault," she said. "Is there nothing due to him?"

Dane noticed the sternness in her eyes, and glanced as if for support towards Miss Barrington. "I fancy he would be the last to claim it if he knew what we do. Still, in the meanwhile, I leave the affair to your aunt and you. We would like to have your views before doing anything further."

He rose as he spoke, and when he had gone out, Maud Barrington sat down at a writing-table. "Aunt," she said quietly, "I will ask Ferris to come here at once."

It was next day when Ferris came, evidently ill at ease, though he greeted Miss Barrington with elaborate courtesy, and would have done the same with her niece but the girl turned from him with visible disdain.

"Sit down," she said coldly. "Colonel Barrington is away, but his sister will take his place, and after him I have the largest stake in the welfare of Silverdale. Now, a story has come to our ears which if it had not been substantiated would have appeared incredible. Shall Miss Barrington tell it to you?"

Ferris, who was a very young man, flushed, but the color faded and left his cheeks a trifle gray. He was not a very prepossessing lad, for it requires a better physique than he was endowed with to bear the stamp of viciousness that is usually most noticeable on the feeble, but he was distinguished by a trace of arrogance that not infrequently served him as well as resolution.

"If it would not inconvenience Miss Barrington, it would help me to understand a good deal I can find no meaning for now," he said.

The elder lady's face grew sterner, and very quietly but remorselessly she set forth his offense, until no one who heard the tale could have doubted the origin of the fire.

"I should have been better pleased, had you, if only when you saw we knew everything, appeared willing to confess your fault and make amends," she said.

Ferris laughed as ironically as he dared under the eyes which had lost their gentleness. "You will pardon me for telling you that I have no intention of admitting it now. That you should be so readily prejudiced against me is not gratifying, but, you see, nobody could take any steps without positive proof of the story, and my word is at least as credible as that of the interloper who told it to you."

Maud Barrington raised her head suddenly, and looked at him with a curious light in her eyes, but the elder lady made a little gesture of deprecation.

"Mr. Courthorne has told us nothing, she said. "Still, three gentlemen whose worth is known at Silverdale are willing to certify every point of it. If we lay the affair before Colonel Barrington, you will have an opportunity of standing face to face with them."

The lad's assurance, which, so far and no further did duty for courage, deserted him. He was evidently not prepared to be made the subject of another court-martial, and the hand he laid on the table in front of him trembled a little.

"Madam," he said hoarsely, "if I admit everything what will you do?"

"Nothing," said Maud Barrington coldly. "On condition that within a month you leave Silverdale."

Ferris stared at her. "You can't mean that. You see, I'm fond of farming, and nobody would give me what the place cost me. I couldn't live among the outside settler fellows."

The girl smiled coldly. "I mean exactly what you heard, and, if you do not enlighten them, the settlers would probably not object to you. Your farm will be taken over at what you gave for it."

Ferris stood up. "I am going to make a last appeal. Silverdale's the only place fit for a gentleman to live in Canada, and I want to stay here. You don't know what it would cost me to go away, and I'd do anything for reparation—send a big check to a Winnipeg hospital and starve myself to make up for it if that would content you. Only, don't send me away."

His tone grew almost abject as he proceeded, and while Miss Barrington's eyes softened, her niece's heart grew harder because of it, as she remembered that he had brought a strong man down.

"No," she said dryly. "That would punish your mother and sisters from whom you would cajole the money. You can decide between leaving Silverdale, and having the story, and the proof of it, put into the hands of Colonel Barrington."

She sat near an open window regarding him with quiet scorn, and the light that shone upon her struck a sparkle from her hair and set the rounded cheek and neck gleaming like ivory. The severity of her pose became her, and the lad's callow desire that had driven him to his ruin stirred him to impotent rage in his desperation. There were gray patches in his cheeks, and his voice was strained and hoarse.

"You have no mercy on me because I struck at him," he said. "The one thing I shall always be sorry for is that I failed, and I would go away with pleasure if the horse had trampled the life out of him. Well, there was a time when you could have made what you wished of me, and now, at least, I shall not see the blackleg you have showered your favors on drag you down to the mire he came from."

Maud Barrington's face had grown very colorless, but she said nothing, and her aunt rose and raised the hammer of a gong.

"Ferris," she said. "Do you wish to be led out by the hired men?"

The lad laughed, and the hideous merriment set the white-haired lady's nerves on edge. "Oh, I am going now, but, for once, let us be honest. It was for her I did it, and if it had been any other man I had injured, she would have forgiven me."

Then with an ironical farewell he swung out of the room, and the two women exchanged glances when the door closed noisily behind him. Miss Barrington was flushed with anger, but her niece's face was paler than usual.

"Are there men like him?" she said.

Miss Barrington shook off her anger, and rising, laid a gentle hand on her niece's shoulder. "Very few, I hope," she said. "Still, it would be better if we sent word to Dane. You would not care for that tale to spread?"

For a moment the girl's cheeks flamed, then she rose quietly and crossed the room.

"No," she said, and her aunt stood still, apparently lost in contemplation, after the door swung softly to. Then she sat down at the writing table. There was very little in the note, but an hour after Dane received it that night, a wagon drew up outside Ferris's farm. Two men went quietly in and found the owner of the homestead sitting with a sheaf of papers scattered about the table in front of him.

"Come back tomorrow. I can't be worried now," he said. "Well why the devil don't you go?"

Dane laid a hand on his shoulder. "We are waiting for you. You are coming with us!"

Ferris turned, and stared at them. "Where to?"

"To the railroad," Dane said dryly. "After that you can go just where it pleases you. Now, there's no use, whatever, making a fuss, and every care will be taken of your property until you can arrange to dispose of it. Hadn't you better get ready?"

The grim quietness of the voice was sufficient, and Ferris, who saw that force would be used if it was necessary, decided that it was scarcely likely his hired men would support him.

"I might have expected it!" he said. "Of course, it was imprudent to speak the truth to our leader's niece. You know what I have done?"

"I know what you did the night Courthorne nearly lost his life," said Dane. "One would have fancied that would have contented you."

"Well," said Ferris, "if you would like to hear of a more serious offense, I'll oblige you."

Dane's finger closed on his arm. "If you attempt to tell me, I'll break your head for you."

Next moment Ferris was lifted from his chair, and in less than ten minutes Dane thrust him into the wagon, where another man, who passed a hand thru his arm, sat beside him. It was a very long drive to the railroad, but few words were exchanged during it, and when they reached the settlement one of Ferris's companions mounted guard outside the hotel he found accommodation in, until the Montreal express crawled up above the rim of the prairie. Then both went with him to the station, and as the long cars rolled in Dane turned quietly to the lad.

"Now, I am quite aware that we are incurring some responsibility, so you need not waste your breath," he said. "There are, however, lawyers in Winnipeg, if you fancy it is advisable to make use of them, and you know where I and Macdonald are, if you want us. In the meanwhile, your farm will be run better than ever it was in your hands, until you dispose of it. That is all I have to tell you, except that if any undesirable version of the affair gets about, Courthorne or I will assuredly find you."

Then there was a scream of the whistle, and the train rolled away with Ferris standing white with fury on the platform of a car.

In the meanwhile Maud Barrington spent a sleepless night. Ferris's taunt had reached its mark, and she realized with confusion that it was the truth he spoke. The fact that brought the blood to her cheeks would no longer be hidden, and she knew it was a longing to punish the lad who had struck down the man she loved that had led to her insistence on the former leaving Silverdale. It was a difficult admission, but she made it that night. The outcast who had stepped out of the obscurity, and into her peaceful life, had shown himself a man that any woman might be proud to mate with, and, tho he had said very little, and now and then his words were bitter, she knew that he loved her. Whatever he had done, and she felt against all teachings of her reason that it had not been evil, he had shown himself the equal of the best at Silverdale, and she laughed as she wondered which of the men there she could set in the balance against him. Then she shivered a little, remembering that there was a barrier whose extent he alone realized between them, and wondered vaguely what the future would bring.

It was a week or two before Winston was on his feet again, and Maud Barrington was one of the first to greet him when he walked feebly into the hall. She had, however, decided on the line of conduct that would be most fitting, and there was no hint of more than neighborly kindliness in her tone. They had spoken about various trifles when Winston turned to her.

"You and Miss Barrington have taken such good care of me that if I consulted my inclinations I would linger in convalescence a long while," he said. "Still, I must make an effort to get away tomorrow."

"We cannot take the responsibility of letting you go under a week yet," said Maud Barrington. "Have you anything especially important to do?"

"Yes," said Winston, and the girl understood the grimness of his face. "I have."

"It concerns the fire?"

Winston looked at her curiously. "I would sooner you did not ask me that question, Miss Barrington."

"I scarcely fancy it is necessary," said the girl, with a little smile. "Still, I have something to tell you, and a favor to ask. Ferris has left Silverdale, and you must never make any attempt to discover what caused the fire."

"You know?"

"Yes," said Maud Barrington. "Dane, Macdonald, and Hassal know, too, but you will not ask them, and if you did they would not tell you."

"I can refuse you nothing," said Winston with a laugh, tho his voice betrayed him. "Still, I want a quid pro quo. Wait until Ferris's farm is in the sale list and then take it with the growing crop."

"I could not. There are reasons," said the girl.

Winston gazed at her steadily, and a little color crept to his forehead, but he answered unconcernedly, "They can be over-ridden. It may be the last favor I shall ever ask of you."

"No," said Maud Barrington. "Anything else you wish, but not that. You must believe, without wondering why, that it is out of the question!"

Winston yielded with a curious smile. "Well," he said, "we will let it drop. I ask no questions. You have accepted so much already without understanding it."

CHAPTER XVIII.

With The Stream

It was Winston's last afternoon at the Grange, and almost unpleasantly hot, while the man whose vigor had not as yet returned to him was content to lounge in the big window-seat listlessly watching his companion. He had borne the strain of effort long, and the time of his convalescence amid the tranquillity of Silverdale Grange had with the gracious kindliness of Miss Barrington and her nice been a revelation to him. There were moments when it brought him bitterness and self-reproach, but these were usually brief, and he made the most of what he knew might never be his again, telling himself that it would at least be something to look back upon.

Maud Barrington sat close by, glancing thru the letters a mounted man had brought in, and the fact that his presence put no restraint on her curiosly pleased the man. At last, however, she opened a paper and passed it across to him.

"You have been very patient, but no doubt you will find something that will atone for my silence there," she said.

Winston turned over the journal, and then smiled at her. "Is there anything of moment in your letters?"

"No," she said, with a little laugh. "I scarcely think there is—a garden party, a big reception, the visit of a high official, and a description of the latest hat. Still, you know, that is supposed to be enough for us."

"Then I wonder whether you will find this more interesting: 'The bears made a determined rally yesterday, and wheat moved back again. There was later in the day a rush to sell, and prices now stand at almost two cents below their lowest level.'"

"Yes," said Maud Barrington, noticing the sudden intentness of his pallid face. "I do. It is serious news for you?"

"And for you! You see where I have led you. Ill or well, I must start for Winnipeg tomorrow."

Maud Barrington smiled curiously. "You and I and a handful of others stand alone, but I told you I would not blame you wether we won or lost. Do you know that I am grateful for the glimpses of the realities of life that you have given me?"

Winston felt his pulses throb faster, for the girl's unabated confidence stirred him, but he looked at her gravely. "I wonder if you realize what you have given me in return? Life as I had seen it was very grim and bare—and now I know what, with a little help, it is possible to make of it."

"With a little help!" said Maud Barrington.

Winston nodded, and his face which had grown almost wistful hardened. "Those who strive in the pit are apt to grow blind to the best—the sweetness and order, and all the little graces that mean so much. Even if their eyes are opened, it is usually too late. You see, they lose touch with all that lies beyond the struggle, and without some one to lead them they cannot get back to it. Still, if I talk in this fashion you will laugh at me, but every one has his weakness now and then—and no doubt I shall make up for it at Winnipeg tomorrow. One can not afford to be fanciful when wheat is two cents down."

Maud Barrington was not astonished. Tireless in his activities and, more curious still, almost ascetic in his mode of life, the man had already given her glimpses of his inner self and the vague longings that came upon him. He never asked her pity, but she found something pathetic in his attitude, for she found that the stress and the turmoil alone could be his. Why this was so she did not know, but with a confidence that could not be shaken now, she felt it was thru no fault of his. His last words, however, showed her that the mask was on again.

"I scarcely fancy you are well enough, but if you must go, I wonder whether you would do a good turn to Alfreton?" she said. "The lad has been speculating—and he seems anxious lately."

"It is natural that they should bring their troubles to you."

Maud Barrington laughed. "I, however, generally pass them on to you."

A trace of color crept into the man's face, and his voice was a trifle hoarse as he said, "Do you know that I would ask nothing better than to take every care you had, and bear it for you?"

"Still," said the girl, with a little smile, "that's very evidently out of the question."

Winston rose, and she saw that one hand was closed as he looked down upon her. Then he turned and stared out at the prairie, but there was something very significant in the rigidity of his attitude, and his face seemed to have grown suddenly careworn when he glanced back at her.

"Of course," he said quietly. "You see, I have been ill, and a little off my balance lately. That accounts for erratic speeches, tho I meant it all. Colonel Barrington is still in Winnipeg?"

"Yes," said the girl, who was not convinced by the explanation, very quietly. "I am a little anxious about him, too. He sold wheat forward, and I gather from his last letter has not bought it yet. Now, as Alfreton is driving in tomorrow, he could take you."

(To be continued)

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Poultry.—Fowls, 15@17c; young chickens, 15@17c; old roosters, 12@13c; turkeys, 17@19c; ducks, 15@16c; geese, 14@16c; pigeons, 18@25c pair.

Dressed Poultry.—Western fowls, 14@18c; roosters, 13c; turkeys, 18@25c; roasting chickens, 17@19c; ducks, 16@19c; 14@18c; squabs, $2.00@4.85 doz.

Vegetables.—White Potatoes, Pa., 70@85c bu. Onions, $1.00@2.00 per 100-lb bag. Lettuce, $1@2 hamp. Sweet Potatoes, Jersey, 30@50c bas; Squash, $1@1.50 box. Celery 30@50c bunch. Cabbage, domestic, $20@22 ton; do. Danish, $28@30 ton. Cauliflower, $1.50@1.75 doz. crate. Mushrooms, 50c@$1.50 per 4 lb bas.

Fruits.—Apples, choice, $3.50@5.50 bbl; No. 2 do., $2.50@3.50. Cranberries, Cape Cod, $7@10 bbl. New Jersey dark, $2.50@2.75 crate. Lemons $3@4 box. Grapefruit $2@3.50 box. Oranges $1.75@3.50 box.

Hay and Grain.—No. 3,large bales $18.00@18.50. No.1 medium bales $17.50@18.00; No. 2 medium $16.50@17.00; no grade $10.00@$12.00. Clover mixed hay, light mixed at $16.50@17.00. Straw, No. 1, straight rye, $15.00@15.50; No. 2 do, $15.50@16.00; No. 1 tangled rye straw, $11.50@12.00; No. 2 do., $10.50@11.00, No. 1 wheat straw, $9@9.50; No. 1 oat straw, $10@10.50; new shelled corn No. 2 yellow, kiln dried, 74@75c; Natural No. 2 yellow, 70@71c; Wheat No. 2 red 94@94½c. No. 1 Northern, 98½@99½c; No. 2 white oats, 45½@46c. No. 3 white, 44@44½c. Standard white, 45@45½c.

Coffee.—Rio 7s 8⅝c; Santos 4s 12⅛c. Mild Coffee.—Cordova, 13@16¼c.

Sugar.—Cut loaf, $5.30 cwt.; cubes, $4.40; powdered, $4.25; granulated, $4.20; standard granulated, $4.20; crystal A, $4.15.

Flour.—For 196 lbs in wood, winter-clear, $3.75@4.00; do. straight, $4.15@4.30; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 17; do. country, 15c. Cows, 16@16½c;do country, 14½c. Bulls abattoir, 14½c; do country, 13c. Calf skins, Nos. 5 to 12 and up, $1.45@2.70; do green, 14@15c.

Provisions.—City beef, in sets, smoked and air-dried, 33@33½c. Beef hams, $40@$42. Pork, family, $23@24.00. Hams, cured, 14@15c; skinned, 13½@14¼c; smoked, 16@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 9⅝@9½c; do. smoked, 11½@12c. Bellies in pickle, 14¾@15½c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11½@11⅞c tcs; do in tubs, 11¼@12c; do kettle rendered, 11¼@12c. Tallow, prime city, 7c; country, 7c; do dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 15c ¼-pk. Peppers, 5c apiece. Eggplants, 25c apiece. Cabbage, 5@10c head. Lettuce, 10c head. Beets, 5c bch. Sweet potatoes, 15c ¼-pk. White potatoes, 25c ½-pk. String beans, 15c qt. Tomatoes, hothouse, 35c lb. Cucumbers, 5@10c apiece. Celery, 75c doz. stalks. Squash, 3 for 25c. Cauliflower, 25c hd.

Fruits.—Pears, 15c ¼-pk. Grapes, 25c lb. Apples, 20c ¼-pk. Pineapples, 25c apiece.

BALTIMORE PRODUCE.

Baltimore, Md., Jan. 5, 1914.

Butter and eggs were steady. Poultry firm. Fruit and vegetables steady.

Butter.—Creamery, fancy, 37@38c; do. choice 32@36c; prints 37@39c; blocks 36@38c; Maryland and Penna. rolls, 20@21c. Process, 25@26c.

Eggs.—Near-by firsts, 33c; western, 31c; southern, 31c.

Live Poultry.—Hens, 17c; chickens, 16c; old roosters, 11c, ducks, 16c.

Dressed Poultry. — Turkeys, 20c; Chickens, 17@18c; old roosters, 10@11c; ducks, 15@17c.

Vegetables.—Potatoes, Maryland and Penna. 70@75c bu; Beets 2@3c bch. Beans, green, $2.25@2.75 per ½ bbl. bas; Celery, $2@3 crate. Cucumbers, $3@3.50 bas. Lettuce, 75c@$1.25 bas. Tomatoes, $2.50@4 carrier; Onions, 90c@$1 bu.

Fruits.—Apples, $2.50@4.75 bbl. Cranberries, $1.75@2 box. Grapefruit $2@3.50 box.

Mill Feed. — Sring bran $25.00. Middlings, flour to white, $27.00@29.00; western middlings, $26@26.50; city mills, mid., $26.50@27.00.

Grain.—Wheat, No. 2, red western, 94½c; Spot, 95½c; corn, yellow shelled, 69½@70c; Oats standard, white, 44¼@44½c; No. 3, white 41@41¼c. Rye, 60@73c.

Hay and straw.—No. 1 timothy, $18.50@19.00, No. 2 timothy $17.50; do. No. 8, $15.00@16.00. No. 1 clover, $16.50@17.00 No. 2 do., $13@15; No. 1, tangled rye straw, $11.50@12.00; No. 1 oat straw, $10@10.50; No. 1 wheat straw, $8.50.

WASHINGTON PRODUCE

Washington, D. C., Jan. 5, 1914.

Butter.—Best prints, per pound, 36c; tub, 35c; process, 28@29c; undergrades, 27c.

Eggs.—Near-by, firsts, per doz, 33@35c; Southern, per doz., 32@33c.

Live poultry.—Hens, per lb., 16c; roosters, 10c; springers, 17@18c.

Dressed Poultry.—Hens, per lb., 16c; turkeys, per lb., 21@23c; chickens, 17@18c; ducks 18@20c; roosters, per lb., 11c.

Vegetables.—Potatoes, bbl., $1.00@1.25; Onions $2.15@2.25 bag. Lettuce, per bas., $1.00@1.75. Peppers 2.50@3.50 crate Eggplant, $3.00@4.00 crate. Beets, $2.50@3.50 per 100 bchs. Carrots, 2@3c bch. Cabbage, $1.00@3.50 bbl. Cucumbers, $1@3.50 bas. Sweet Potatoes, $1@2.50 bbl. Celery per doz., 25@75c. Tomatoes $2.50@3.50 crt, Cauliflower, $1.50@1.75 crate. Pumpkins, 5@10c each.

Fruit.—Apples, $1.50@6.00 bbl. Grapes, $4.50@7 ½ bbl. keg. Pineapples, $2@3 crate. Cranberries, $2.00@3.50 small box. Grapefruit, $3.50@4 crate.

BUFFALO PRODUCE.

Buffalo, N. Y., Jan. 5, 1914.

Butter.—Steady; Creamery choice, 37@38c. dairy, 32@33c.

Cheese.—Light demand. Fancy new 17½@18c; good to choice 16@17c; common, 14@15c.

Eggs.—Firm, mixed 39c; do. candled 38@39c; Western do. 38@39c; storage, 28@30c.

Live Poultry.—Firmer. Turkeys 22@23c springers, 14@15c; ducks, 16c; geese 16@18c; fowls, 14@15c; old roosters, 11@12c.

Dressed Poultry.—Fowls, 15@17½c; broilers, 20@21c; chickens, 17@21c; turkeys 23@25c; old roosters, 13@13½c; ducks, 15@20c.

Vegetables.—Potatoes, 65@75c per bushel. Cabbage, new $3@3.50 crate; Squash, $3@3.50 cwt; Turnips yellow, 75@90c bbl.

Fruits.—Apples, $1.00@5.00 bbl.

Hay.—Steady. Timothy, choice on track, $17.50; No. 2 do., $16.50; No. 3, $15.00; rye straw, $8.50@9.00; oat and wheat straw, $7@8.00.

Feed.—Firm. Spring bran, carloads $23.50. Standard mids., $24.00, flour, $27.50. Corn meal, $31.00. Gluten, $29.25. Hominy $28.00. Oil meal, $29.25. Cottonseed meal $33.00.

NEW YORK PRODUOE

New York City, Jan. 5, 1914.

Butter barely steady. Eggs irregular. Poultry trading slow and prices little changed.

Eggs.—State and near-by hennery whites, fine to fancy, 45@48c; gathered whites, 45@46c; fair to good, 42@44c; no grades, 37@42c; fresh gathered, firsts to extras 37@38c; seconds to thirds, 32@34c; no grades, 24@29c; mixed, 35½@36½.

Butter.—Creamery, firsts to extras, 36½@37½c; thirds to seconds, 22@27½c; factory 18@22c; state dairy, 20@34c; packing stock, 18@20½c; process, 20@25c.

Cheese.—Whole milk specials, 16@17c; do. common to fancy, 13@16¾c; skims, 5@13½c.

Dressed Poultry—Turkeys, dry, 16@23½c; chickens, 16@28c; fowls, 10@18c; old roosters, 12½c; ducks, 15@19c.

Live Poultry.—Prices not settled.

Vegetables.—Cabbage, $23.00@30.00 ton. Green beans, $1.50@3.50 bas. Carrots, $1.00 bag. Cucumbers, $2@4.50 box. Lettuce, 50c@$1.25 bas. Squash, $2.00@2.50 bbl. Celery, 25@75c per doz. stalks. Onions, $1.75@@2.15 100-lb bag. Tomatoes, $1.50@3.00 carrier. Peppers, $1.75@2.25 per carrier. Beets, $1@1.50 per 100 bunches. Potatoes, $1.50@5.00 bbl. Sweet Potatoes, $1.50@2.00 bbl. Eggplants, $2.25@3.50 box. Cauliflower, $1.50@2.00 bas.

Fruit.—Apples, $1.50@5.00 bbl. Cranberries $2.75@14.00 bbl. Pears, $2.00@3.75 bbl.

Grain.—Wheat, No. 2, red, $1.00; No. 1, Northern, $1.00¼c; corn, No. 3 yellow, new 70⅞c; oats standard, white, 45@45½c.

WILMINGTON PRODUCE.

Wilmington, Del., Jan. 5, 1914.

Butter.—Print butter, 38@45c lb. Creamery rol', 85@45c.

Poultry.—Chickens, dressed, 18@25c; ducks, 18@20c.

Eggs.—38@45c doz.

Vegetables.—Potatoes 10@12c ¼-pk. Cabbage, new, 4c up. Sweet potatoes, 45@50c bas. Onions, 10@12c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets, 5@8c bch. Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼-pk. Pineapples, 20@25c apiece. Grapes, 20@25c bas. Oranges, California, 25@30c doz; Florida, 35@50c doz. Bananas, 10@15c doz. Pears, 10c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼-pk. Grape fruit, 7@10c each.

PHILADELPHIA LIVE STOCK.

Philadelphia, Pa., Jan. 5, 1914.

Beef Cattle.—The general market was inactive and somewhat disappointing, and tho supplies were rather light they were fully ample for all requirements. Ohio, Illinois and Kentucky cattle were on sale. Cows of the better sorts closed firmer and calves under limited arrivals ruled firm.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,098	7,432	5,289
Previous week	2,718	8,982	4,577

Best steers	$8.50@8.65
Best steers	$8.65@8.75
Choice steers	8.40@8.50
Good	8.20@8.30
Medium steers	7.75@8.00
Common steers	7.40@7.50
Bulls	5.25@6.70
Fat Cows	6.20@6.75
Medium cows	4.75@5.75
Thin cows	2.75@4.00
Milk cows	45.00@80.00

Veal calves firm. Receipts for past week were 1,029 as compared with 607 a week ago.

Best calves	$11.50@12.00
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	6.50@7.00
Culls	5.00@8.00

Sheep and Lambs.—Desirable lambs closed at an advance, with the top of the sheep market, including heavy, fat ewes, a fraction stronger. There was very little doing, however, and supplies were not liberal.

Choice wethers	$5.00@5.75
Good do.	4.50@4.75
Common to medium	2.00@3.50
Ewes, fat	4.50@5.00
Extra lambs	8.50@8.75
Good to choice do.	8.00@8.50
Common to medium	5.50@7.75

Hogs.—Values were well sustained at the current range, with demand fairly seasonable. Western, as to size and quality are quoted at $11.50@11.75.

City Dresed Stock—Every variety of choice and prime meats closed steady at quotations; trade being about normal. Steers, 11@13½c; heifers, 10@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@10c; extra wethers, 10½c. Spring lambs, 13@14c. Extras, 16c. Hogs, 11¾@12c.

PITTSBURGH LIVE STOOK.

Pittsburgh, Pa., Jan. 5, 1914.

Cattle.—With a supply of 80 loads on sale the market opened slow at about steady prices but later became active with prices generally 10 to 15 cents per cwt. higher on all grades. Not many light, low-priced cattle on sale here, the bulk being on medium weight order. Heifers and fat cows sold at about the same advance as steers while bulls were steady to strong. Today's supply was 120 cars. Market ruled steady to easy.

Good to choice	$8.60@8.75
Good 1,300-1,400 lb.	8.30@8.55
Medium to good 1,200-1,300 lb.	7.85@8.10
Tidy 1,050-1,150 lb.	8.10@8.25
Fair to medium, 900-1,100 lb.	7.00@7.60
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.00@6.00
Common to good fat bulls	5.00@7.35
Common to good fat cows	4.00@6.50
Heifers	5.25@7.75
Bologna cows	3.00@3.75
Fresh cows and springers	25.00@90.00

Calves.—Veal calves in light supply all week and market closed steady. Today's supply was 500 head, and market ruled steady.

Heavy and thin calves	$5.00@ 7.00
Veal calves	8.00@12.00

Sheep and Lambs.—Sheep and lambs have been in light supply and with a good demand the market ruled active and higher, the close on sheep being 35c per cwt. above Monday's prices, while lambs were steady. Today's receipts were 33 double-decked loads. With a good demand the market ruled steady on both sheep and lambs.

Prime wethers	$5.60@5.85
Good mixed	5.15@5.35
Fair mixed ewes and wethers	4.35@4.85
Culls to common	3.00@3.50
Spring lambs	5.50@8.50

Hogs.—The supply of hogs since Monday has been liberal, and with a good demand the market ruled active all week, the close for the week being 10 cents per cwt. higher on heavy hogs and 20 to 25 cents higher on other grades. Today's receipts were 65 double-deck loads, and the market ruled 10 to 15 cents higher than Saturday.

Prime heavy	$8.75@
Prime medium weights	8.75@
Heavy mixed	8.70@
Best heavy Yorkers	8.75@
Light Yorkers	8.75@
Pigs, as to quality	8.70@8.75
Common to good roughs	6.75@7.75
Stags	6.25@6.50

BALTIMORE LIVE STOOK.

Baltimore, Md., Jan. 5, 1914.

Cattle.—Receipts for the week, 2,282 head against 1,634 last week.

Steers	$8.00@8.25
Heifers	6.00@7.25
Cows	4.00@6.25
Bulls	4.00@6.50
Fresh Cows	37.00@77.00

Sheep and lamb receipts for the week were 3161 head against 3,285 last week. Fair supply; market higher.

Sheep	$3.00@3.50
Lambs	5.50@8.60

Calf receipts for the week were 254 head. Light supply; market higher at $6.50@11.75.

Hog receipts for the week were13,963 head against 14,661 last week.

Light Western	$8.90@9.05
Heavy to medium	8.80@9.00
Near-by	8.75@8.90
Pigs	8.50@8.70
Roughs	7.00@8.10

NEW YORK LIVE STOCK.

New York City, Jan. 5, 1914.

Beef Cattle.—Receipts for week 4,000 head. Market irregular.

Steers	$6.00@9.25
Bulls	5.25@7.50
Cows	3.50@6.75
Dressed beef	12@14c

Calf receipts 2,300 head. Market steady.

Choice	$9.00@13.50
Culls	7.00@8.50

Dressed Calves lower. Dressed veals, 16@20c.

Sheep and lamb receipts, 14,400 head. Market steady.

Sheep	$3.75@5.50
Mixed	6.00@6.75
Culls	3.00@3.50
Spring lambs	7.00@8.50

Hog receipts 7,400 head. Market firm. Choice, $8.60@8.75; roughs, $7.50@7.75.

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 5, 1914.

Cattle.—The high opening Monday and the light supply gave a good tone for the week on the desirable grades. All butcher grades were in good demand but stockers and feeders were in light demand. On the close the market was steady under fair demand. Arrivals in the yards this morning numbered 120 loads. The market was 10@15c higher on all grades.

Choice heavy steers	$8.60@8.90
Medium	7.90@8.50
Yearlings	7.50@8.00
Handy butchers	7.60@8.35
Good to choice fat cows	6.25@7.00
Good to choice heifers	7.00@7.75
Butcher bulls	4.25@7.00
Feeders	5.00@7.00
Stockers	4.00@7.10
Roughs	7.50@7.60
Cows and springers	30.00@90.00

Calves.—The Monday supply was light and the market firm on the basis of $12@12.50 for the best veals. The offerings were light on the close and the basis higher, being $11.75@13.25. Receipts were light today and the market firm at last week's quotations.

Choice veals	$12.00@12.50
Lights and thin	6.00@ 8.75

Sheep and Lambs.—The active and higher opening on Monday gave a good tone thruout the week. Yearlings were in good demand and on higher basis. Sheep in active demand. On the close the market was fairly active with lambs a quarter lower and sheep steady.

Choice lambs	$8.50@8.65
Poorer grades	6.50@7.00
Yearlings	6.50@7.05
Wethers	5.75@6.00
Ewes	5.25@5.50
Sheep	4.00@6.00

Hogs.—The hog trade for the week was in good position under good demand.

Heavies	$8.65
Mixed and medium	$8.65@8.70
Yorkers	8.40@8.45
Light Yorkers	8.30@8.35
Pigs	8.70@8.75
Roughs	8.70@8.75
Stags	6.00@7.00

Horses.—Some 360 head were sold this morning. The general demand was fair at steady prices.

CHICAGO HORSE MARKET

Chicago, Jan. 5, 1914.—Horses were marketed so moderately last week that prices were not generally shaded much, despite the restricted general local and shipping demand. Few horses of the better class were offered, and only a limited number of choice heavy drafters went at $260@285 per head, fair to good ones weighing 1,600 lb. or little heavier going at $200@250. Farm work horses were slow of sale at $100@225, sales being mostly below $200. Rough wagon horses brought $165@215, and chunks weighing from 1,425 to 1,550 lb. brought $235@275.—F.

VISIBLE GRAIN SUPPLY

New York, Jan. 5, 1914.

Visible supply of grain:
Wheat, increased 269,000 bushels.
Wheat, in bond, decreased 738,000 bushels.
Corn, increased 4,203,000 bushels.
Oats, increased, 146,000 bushels.
Oats, in bond, increased 172,000 bushels.
Rye, decreased 103,000 bushels.
Barley, decreased 183,000 bushels.
Barley, in bond, decreased 37,000 bushels.

ELGIN BUTTER QUOTATION.

Elgin, Ill., Jan. 5, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 35c a pound.

TOBACCO MARKET

The inconsistency of the government reduction in the appropriation for tobacco experiments from $31,630 to $25,000 is shown by the substantial increase in the already comparatively stupendous sum alloted or the investigation of the cotton boll weevil, a strictly southern crop. The increased sum allowed for this purpose is $378,240 or more than fifteen times that allowed for tobacco. In explanation of the matter it is adroitly suggested that research be "carried on by state and local organizations."

Much less tobacco is stripped than usual at this time of year. The situation is quiet and was made more so by the recent holiday season. However, a few sales of seedleaf were reported in the Manor section. One crop sold at $11, and one at $8 per cwt. A crop of hail-cut Havana sold at $9 and another at $5 per cwt. A large crop of 1912 packing sold at $10 per cwt. All interests are optimistic as to future demand, as it is a well-known fact that the Ohio crop is short and that manufacturers must sooner or later turn to Pennsylvania for supplies. The present outlet is well shown by the recent sale of 1,500 cases by one packer, the same going to a prominent New York firm. Prices for the lot, it is stated, ranged from $14 to $16 per cwt.

In Ohio, buying of the new crop continues at $12 to$13 per cwt. for Zimmer Spanish and $10 for Gebhardt. In New York the superior quality of the new crop is a subject of general comment, and it is gradually being sold at satisfactory prices. In Connecticut the situation is practically the same. In the Wisconsin section unfavorable weather has resulted in the almost total suspension of tobacco operations. Abnoramlly high temperature with fog and rain has resulted in the heating in bulks, and even where hanging, traces of mildew or mold have begun to be seen on stems. At this season of year, however, such a situation is almost sure to be shortlived and no considerable damage is anticipated.

In volume of business the burley section of Kentucky and Ohio is at present much greater than any other section. The various looseleaf markets in this district and the two larger hogshead markets at Louisville and Cincinnati are selling millions of pounds weekly, practically the whole of which is being sold to factory buyers and either shipped there at once or stored for future shipment.—H. E. Tweed, Jan. 5, 1914.

COUNTY NOTES

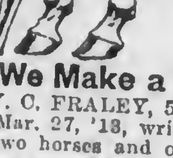
Green Co., Pa., (S.W.) Dec. 26, 1913 —Very unsettled. Live stock very scarce, but in good condition. Sheep 4c per lb.; pigs, from $6 to 9 pair; eggs 35c doz.; butter, 30c; corn, 90c bu. oats, 50c bu.; wheat, $1.00 bu. Owing to the mild weather so far, there will be plenty of feed for the winter.—C. L. Addleman.

Adams Co., Pa., (S.C.) Dec. 29, 1913 —Real winter weather; some snow. Some live stock dying due to eating old musty corn and fodder. Prices of stock high; feed scarce and high. Butter, milk and eggs also a good price. Plenty of work still to do, but weather unfavorable.—R. D. Myers.

Fayette Co., Pa., (S.W.) Dec. 1913.—This has been a very mild open winter. Had only one inch of snow and not very cold weather yet. The butchering season is about over and everybody getting ready for Christmas. Hogs fattened out nicely and went onto the market at 11@13c, dressed. Eggs are still 50c doz. Corn is all gathered. Stover is being hauled. Some are shredding their stover. Some ploughing has been done.—Samuel A. Harris.

McKean Co., Pa., (N.C.) Dec. 1913.—Very light snow and continued warm. Cows $50@75; pork, 12c; apples, $3.50@$5.00 bbl.; potatoes, $1 bu.; hay, retail, $15.50 ton; straw, $9 ton; eggs, 53c doz. for strictly fresh. Butter, 40c lb. Farm work in good condition. Plowing done and manure hauled as made.—M. Ingalsby.

Bradford Co., Pa., (N. E.) Dec. 1913.—Very warm and dry. The yield of milk is about normal on account of very warm weather. Cows have dropped in price a little. Winter grain doing nicely. But one heavy freeze as yet. Roads in fine shape.—L. C. B. roughs.



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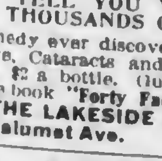

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Indigestion—Loss of Vision—Worms—Seven-year-old mare had distemper very hard last April, got better without any cough or heaves, but does not digest food properly and does not seem to gain in flesh or strength. Unless she is fed oats, bran, a little oil meal and hay, she seems to have colic. Every time I feed her corn it appears to distress her. Sometime ago she was wormy, but failed to find any pass her now. This mare is nervous and high strung and not the kind to lay on flesh rapidly, but she needs treatment. I also have a six-year-old mare that is wholly or partly blind in her right eye. The eye ball is covered with a whitish film and a watery discharge comes from eye occasionally. We also have a two-year-old colt and another six-months-old that are troubled some with worms. How much oats and bran should each of them have? I give them each a box stall, 10 by 12 feet, and yard exercise, 2 or 3 times a week. M. D. S., Union City, Pa.—Give your mare ½ oz. Fowler's solution and 1 dr. ground nux vomica at a dose in feed, 3 times a day. Wash eye with a standard solution of boracic acid, twice a day. I do not believe vision can ever be restored, no matter what doctors may tell you. Mix together equal parts ground gentian, ginger, fenugreek and bicarbonate of soda. Give each colt a teaspoonful or two at a dose in feed, twice a day; also salt them well. Give the two-year-old colt 2 quarts of oats at a feed, 3 times a day, and the six-months-old colt, 1 quart at a feed, twice a day.

Poor Ration—I have a Berkshire brood sow, about 18 months old, which commenced to show soreness in hind legs some 6 weeks ago. Part of the time I was inclined to believe that she was sore in some fore quarters. A neighbor told me that she had kidney worm and advised me to give her oil of savin which I tried with poor results. Her appetite is good and I feed her a slop of ground wheat, oats and corn. She is not overly fat and has the run of an orchard. F. R. S., Linesville, Pa.—Feed your sow no corn, but give her oats, oil meal and roots. I believe if she had less feed and more exercise it would be better for her. Feeding her corn and wheat has caused her to go wrong. Give her 15 grains sodium salicylate at a dose, 4 or 5 times a day. If her bowels are costive, give her 2 or 3 ounces of castor oil or the same quantity of Epsom salts. She should be kept in a clean, dry and warm place.

Spasm of Larynx.—My young pigs frequently have a sort of fit following the first mouthful they take. After this fitty spell passes off they stagger around a little, then go to eating. These pigs are about two months old. J. T. A., Meadville, Pa.—Your pigs either choke themselves or else the food is too cold, producing spasm of larynx. I am inclined to believe that they choke themselves on the first mouthful of food. Feed them warm semi-sold food and spread it out thin. This will prevent them taking too much food in their mouth at once.

Chapped Teats.—My cows has been troubled for some time with chapped teats. I am anxious to heal them up. Can you give me a good remedy? M. G. T., Oil City, Pa.—Apply equal parts lemon juice and glycerine, or apply equal parts compound tincture benzoin and glycerine to sores, once or twice a day.

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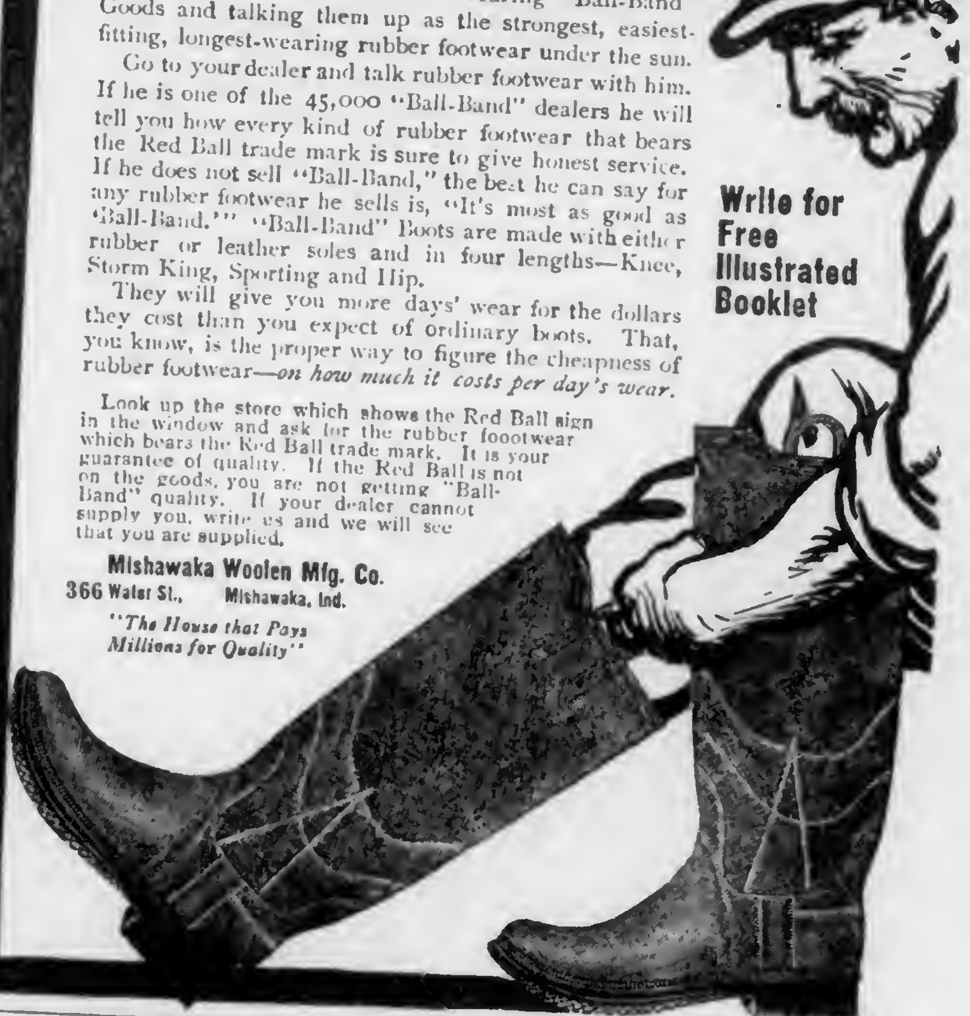

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"Justin," Norma Thorsen, Palo Alto Co., **Iowa.**
"Jerry," Cleta Johnson, Douglas Co., **Kansas.**
"Keno," Vanessa Lykins, Bourbon Co., **Kentucky.**
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"Clipper," Adelaide J. Stever, Bristol Co., **Mass.**
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NOTICE WE PRINT THE NAMES OF 30 OF OUR 157 LUCKY PONY WINNERS. We would gladly print the whole 157 names if we had room for them here, but we will send them to you just as soon as we hear from you. Possibly some of these happy children live in your county or a county near you and, if so, you probably know them because our Lucky Pony Winners are the best known children in their neighborhoods. However, it doesn't make any difference where you live; if you send us your name and are the lucky child to get "White Sox," he and his whole outfit will be shipped without one cent of cost to you. If you send us your name the day you read this, we will send you 1,000 votes for "White Sox" and also a big surprise that will double your chances of getting a Shetland Pony. We haven't room to explain it here, but we will tell you as soon as we hear from you. Remember, you can't get "White Sox" until you send us your name and become a member of the Pony Club, so sit down and write us at once. Don't miss this grand opportunity!

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Every single child who sends us his name and joins our Pony Club will receive a handsome prize of his own choosing. Besides the Pony Outfit (and the Big Surprise we have for you), we will give bicycles, diamond rings, sewing machines, rifles, cameras, gold watches, flashlights and many other wonderful rewards that you never could get until now. Of course, "White Sox" and his dandy Outfit is the best prize of all and you have the same opportunity to get him as any other boy or girl if you send us your name now.

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VOL. 35—No.3.

PHILADELPHIA, PA., SATURDAY, JANUARY 17, 191

2 YEARS FOR $1.00.

Care and Treatment of Seed Potatoes.

By E. A. ROGERS,
Cumberland Co., Maine.

There is so much complaint of poor seed potatoes being sold thruout New Jersey, Pennsylvania, Delaware and Maryland, and no doubt the same holds true farther South, that one would wonder whether there are any real good seed potatoes grown. At an informal meeting held in the New Willard Hotel, Washington, D. C., on December 18th, this question of good seed was much discussed. This meeting was announced by Prof. Orton at the morning session of the hearing on the extension of the potato quarantine. He requested all those who were interested in the matter of good seed to attend. The talk drifted largely to the education of the northern seed grower as to ways and means whereby he could produce potatoes for seed that were true to name and free from all disease.

The writer agreed with all that was said but could not help thinking that the grower in the South, purchasing carefully grown seed, is in just as great need of education as to its proper preparation and handling as is the Northern grower in how to produce it.

FIVE HORSE-POWER TRACTOR AT WORK ON FARM OF E. P. GARRETSON, ADAMS CO., PA.

One man can take very poor seed, and by properly preparing it, get better results in the field than his neighbor, who with as fine seed as can be produced anywhere in the North, does not properly fit it for planting. A little carelessness, so slight that one would not even think to call it carelessness, will cut down the yield per acre from a good paying crop to a ruinous loss.

In the spring of 1913 the writer finished cutting the seed for one field about nine o'clock in the morning, having about thirty-four bushels to finish the field. These had been dusted with sulphur as fast as cut and spread upon the potato house floor, about six inches deep. When enough were cut to finish the field we begun sacking the cut seed, one bushel in a sack while the man got the team.

The first load, including fertilizer, was sent to the farther end of the field with the instructions, which had been given repeatedly before, to place both fertilizer and potatoes along the end of the field, where they would be worked across the field, and not on any account to put one bag of seed on top of another. The second load was sent out in the same manner while the writer oiled up the planter, which was started about ten o'clock. About five in the afternoon we had worked over to where the man had thrown one bag of seed on top of another, directly contrary to my specific instructions. I called his attention to it, telling him that there was great danger that the seed in the under bag had heated. The ground was moist and the day was warm, and while I could not determine that the seed had heated I felt such might be the case. As it was a case of using them or not finishing the field that night, I used them.

Now for results: It took just a bag of seed to a row and the row in which this sack of seed was planted did not show over 40 percent of a stand of plants. In the hurry of digging time I did not weigh the product of this row and those on each side of it, but I know the loss was not less than 125 bushels per acre. Had the whole field come as badly as this one row, I should have abandoned it altogether; but there was almost a perfect stand of plants over the whole field except this one row. I cite this case to show that the Northern grower is not always to blame and while he needs education, and needs it badly along the line of producing seed true to name and free from disease, those in the south who buy it are equally in need of education as to the preparation and care of it after it comes into their possession. The heating of seed after it is cut is so deadly to its germination that care must always be used or loss is sure to follow.

I doubt if there is one man in a dozen who can cut seed potatoes from one week to three ahead of the planter and keep them in condition that will give 90 percent of a stand of plants; from 60 to 75 percent will be nearer the actual result, even for the careful man. Again, seed taken out of a cold cellar, where the eyes have not begun to show signs of starting, is not fit to cut and plant. There can be almost as much loss by this method as by the seed heating.

Potatoes intended for seed should not be allowed to sprout in the cellar where they make long white sprouts, if possible to help it, yet I had rather take them when in this condition and cut and plant with all the loss of vitality which has taken place in growing these sprouts than to take them when so hard and cold that the eyes show no signs of life. In the first case, most of the seed pieces would make plants, but not as strong as would have been the case could the plants have come from the first sprouting. In the second case, cutting and planting these hard, cold tubers would be most sure to result in a large percentage of missing hills which might be as high as 50

PRIZE-WINNING POTATOES AT THE MAINE SEED IMPROVEMENT ASSOCIATION SHOW, 1913.
The center till shows sample prize winning Norcross. The till on right showing World's Wonder won second on late variety. Bushel basket on floor, to right, is Norcross. Bushel in center on floor is Snow. Balance of exhibit, World's Wonder, Shown by E. A. Rogers, Cumberland Co., Me.

percent. This is much more apt to take place in the North where potatoes keep very much later in this condition than they do in New Jersey or farther South.

In bringing seed potatoes from the North, they are more or less warmed up in transit and the germ of life in the eyes is becoming active. In my next article I will treat of the proper disinfecting and preparation of seed tubers and the separation of mixed Irish Cobblers, which cost the Southern growers an immense sum each year.

Note.—This is the first of a series of articles on care and treatment of seed potatoes by Mr. Rogers, who is a well-known authority on potato growing. —The Editor.

The Deere Farm Demonstration.---II.

By THE COUNTRY PARSON.

The purpose of the Deere Farm demonstration outlined in our previous article is very clearly stated in Chapter V of the "Story of the Soil." A worn-out farm, without the use of barnyard manure and the help of what my friend John calls "the most scientific fertilizer mixer ever invented" or a cow, and without the purchase of one pound of acid phosphate or ordinary mixed fertilizer is to be made "as productive as it ever was, even in its virgin state." When restored to productive fertility, this land is to cost not more than $50 per acre and is to regularly pay a reasonable interest on the capital invested.

This problem was complicated with peculiar difficulties. About 100 acres of the 500-acre farm had been cleared. This, however, did not mean that it was possible to divide the place into seven 60-acre fields, lay out the work, start the teams and apply the calcium, phosphate and kainit before putting in a crop. A large part of the fields had been permitted to grow in scrub pine and sassafras, for the poorer parts of the farm had been gradually abandoned and cultivation confined to those portions which were best able to produce a crop. The inevitable result was a number of scattered and extremely irregular plots of ground, which had to be cleaned and squared out before they could be tilled to advantage.

Labor was fairly cheap. Colored help could be had for 75 cents a day and board, or $1 to $1.25, if the men boarded themselves. Accustomed to chop and grub, these hands were fairly effective, altho they ordinarily used tools which were so dull and clumsy that a Michigan lumberjack would scorn to be seen with them. When it came to handling teams and modern machinery, they were lost. Driving a six-horse team hitched to a Conestoga wagon, army fashion, with one line, presents no difficulty to the average colored farm hand in Maryland, but this does not mean that he can handle four horses hitched abreast to a disk harrow, not to speak of handling a checkrow corn planter or a seed drill.

The manager of the Deere Farm had these and other aggravating difficulties to contend with. It was a case of keeping the teams going and doing the best you can. Nevertheless, plans were made for the laying out and squaring up of the farm into seven 60-acre fields, leaving some wood lots and permanent pasture land. One of the first moves was to get a stand of alfalfa in order to cut down the heavy feed bills for the necessary teams.

There are three fields on the main road which leads past the Deere Farm. The field nearest the house is No. 3. In the spring of 1911 it was planted to corn, without lime or phosphate, which should have been applied, had it been possible to do so. This field brought only 12½ bushels of corn to the acre, with a fair amount of fodder. In the spring of 1912 the ground was prepared with a disk harrow and sown to cowpeas. It was again impossible to apply either the ground limestone or the raw phosphate. The cowpeas did not do much. They were disked under in the fall of 1912 and the field sown to wheat, after two tons of raw rock phosphate and one-half ton of kainit to the acre had been applied. The wheat came up strong and green, wintered well and produced a fair yield of grain and straw. This wheat was used as a nurse crop for grass. A good stand was secured and at the time of my recent visit was being grazed by teams.

Field No. 1 adjoins field No. 3 on the southwest. It also fronts on the main road and has the same type of soil, a fairly heavy loam. Since it adjoins the timberland, it required more labor than No. 3. A considerable portion of it was cleared to square out the field. It was therefore also impossible to make any application of lime or floats. So far as it was cleared, it was plowed in the spring of 1911 and planted with corn. This portion of the field was sowed with cowpeas and soybeans in the spring of 1912, while the newly cleared portion was planted with corn. The corn was practically a failure, even on the recleared ground, and the soybeans, because of imperfect inoculation, did not make very good showing. Phosphate and kainit were applied in the spring of 1913, and the field again sowed to cowpeas and soybeans. There was a fair stand, altho the cowpeas looked rather yellow, which may be due to the phosphate or lack of lime.

A ROW OF MAPLES PROVIDES A WINDBREAK EVEN IN WINTER "FOLIAGE."

The other front field is of a different soil type, a Susquehanna gravel and Windsor sand rather than a Leonardtown loam. Last year it had a scattered stand of puny soybeans. It was planted with corn, which did not make much of a yield. A cover crop of cowpeas has been sown between the corn rows. So far as I can see, there has been no application of lime or phosphate. This field is interesting, because we here have the first attempt to use a cover crop on the Deere Farm, something which Dr. Hopkins might have done in 1911, instead of 1913, had he taken the advantages of our Maryland climate into account.

Field No. 5 lies to the east of field No. 3, back from the road. It is a beautiful piece of undulating loam. After being plowed in the spring of 1911, this field was sown to crimson clover and cowpeas, neither of which did much. The raw rock and kainit was applied in the spring of 1912, when the ground was prepared for corn. The response was prompt and the yield, while not large, was quite satisfactory. The promptness with which our Maryland soils respond to treatment and work is a constant source of astonishment to our German farmers, who come to Maryland from the West. They call it "a grateful soil." The results obtained by the Deere Farm demonstration would go to show that they are right.

The alfalfa field is the farthest field from the road. While it adjoins the Susquehanna gravel field, it has a heavier and more loamy soil. This, by the way, is another peculiarity of these southern Maryland farms: The presence on one forty-acre field of half a dozen different types of soil. That one formula for treatment should equally apply to all of them does not seem quite reasonable.

I first saw this field after it had been prepared for alfalfa by the application of 6 tons of ground limestone per acre, careful working and inoculation with soil procured from the Maryland Agricultural College. Wherever the inoculation had succeeded, the alfalfa was of a dark green color which is a guarantee of success. The stand however, was very uneven. I felt at the time that the spreading bacteria and the increasing effect of the heavy application of lime might perhaps save the situation. The outcome proved this opinion to be correct. This field now has a very satisfactory stand of alfalfa, altho the presence of sorrel and dewberry vines would indicate that the soil is still acid. If there is an acid subsoil, the stand will not hold, but the experience of one of our German farmers with alfalfa upon a Leonardtown loam would indicate that this apprehension is unfounded.

I am still mystified by Dr. Hopkins' manner of applying his three-ply formula. It is "raw ground limestone, raw phosphate and organic matter." Not one of the Deere Farm fields has received any lime excepting the alfalfa field. Am I justified in asking if this is done in order that the acidity of the soil may acidulate the raw phosphate? If this is the case, may I also ask, if instead of waiting three years before applying lime, and harvesting a crop, it might not perhaps be more economical to immediately apply the lime with acid phosphate, especially since lime is so essential to the growth of leguminous cover crops? Dr. Hopkins' formula makes no mention of kainit. It is applied with the phosphate because "in the absence of decaying organic matter, the potassium of the soil becomes available very slowly. The kainit furnishes both potassium and magnesium in soluble form and it also contains sulphur, sodium and chlorine." Since decaying organic matter, which makes the use of kainit unnecessary, may be procured by the use of lime, I am again unable to understand why no lime has yet been applied upon the fields of the Deere Farm.

Now, I believe that Dr. Hopkins, if given sufficient time, will make good his claims, but I am unable to see how his doing so will benefit the man with limited means who must make a living for himself and his family while improving his farm.

Here is the proposition. The 500-acre farm cost $5,000. The soil is certainly cheap enough. And $35 per acre is not too much to pay for lime, phosphate and kainit if the one application is not to be repeated for six or eight years. If we think of what farmers ordinarily pay for an annual application of commercial fertilizer, this is also cheap enough. But it means the spending of $3,500 upon 100 acres of a 500-acre farm, besides buying teams and implements, spending money on putting buildings and fences in repair, more money on clearing and squaring out irregular fields, still more money for feed for the teams and for the family living expenses, and then work and wait for three whole years before the farm is in shape to produce a halfway decent crop. Surely no man can go into such a proposition unless he is backed by some philanthropic capitalist. A cash outlay of $15,000 and three years work will give him only 100 acres of tillable soil to pay the interest charges of $900 plus taxes, before the farmer has one cent to show for his seed and labor.

Against this several things may be said. For instance, that it is not necessary that the farmer should buy so much land and come on a bare farm. Buying too much land, just because it is cheap, is a pitfall for most people who come to southern Maryland. Nor is it necessary to improve the entire farm at once. If the lime and phosphate are applied to a ten-acre field each year, the whole farm can be gradually improved. Besides, most of these people own their farms and have managed to make a living on them. If they can be shown the possibilities of their soil under proper treatment, they will have received a very real service.

This is undoubtedly true, and the neighborhood of the Deere Farm is beginning to show that the community is profiting by Dr. Hopkins' demonstra- this meagre encouragement. If a farm- tion. But we must not overestimate er can spend $350 a year to apply lime, phosphate and kainit upon a ten-acre field, it will take him ten years to cover one hundred acres. Before he has covered two-thirds of his farm, he must begin to make a second application. To this we must add the expense of growing and plowing under green fertilizer. At that rate it will take a man 20 years to restore to fertility the soil of a 100-acre farm.

After the second or third year there will be an increased yield of crops from the 10 or 20 acres first treated. This may be looked upon as clear profit and a part of it will be spent upon other fields. A stand of grass or alfalfa may also be secured. This will relieve our farmer from the necessity of buying feed for his team. If he can keep stock the manure, to a certain extent, will also relieve him of the necessity of buying kainit, the most expensive of the fertilizing materials. But the fact remains that the restoring of a worn-out farm to productive fertility is a very slow and a very expensive process, impossible of accomplishment without cheap money and long-time loans. This brings us to the much discussed question of rural savings and credits. Dr. Hopkins is demonstrating two things at the Deere Farm, the possibility of soil restoration and the need of an agricultural credit system.

With all my admiration for the splendid results achieved at the Deere Farm, I have not yet been able to persuade myself that this formula, "lime, phosphate, organic matter," is a sovereign specific for every soil illness. Unfortunately, the impression is somtimes conveyed that such is the case. The work of our Maryland Experimental Station and our Field Demonstration Service, together with the experience of Southern Maryland farmers with lime, cover crops and acid phosphate persuade me that it is quite legitimate to ask: Is there perhaps another and a cheaper way to get at this thing—a way leading to the same goal, which may be followed by the man of limited means who must think first of making a living and second of soil improvements? While I may not be able to put it into three words, I think there is such a way. Whether there is or not, one other fact remains: The most important ingredient in every recipe is the calm, dispassionate judgement of the man who prescribes it.

A GIANT LEGUME

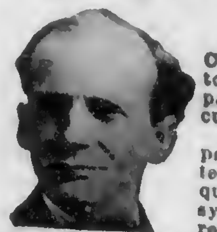
The accompanying illustration shows a large locust tree in the back yard at Woodbine Farm. The evidences of a dwelling are found on the spot where the little building stands, and this tree was planted by a pioneer, as locust is not a native to this section of country.

LARGE LOCUST TREE ON WOODBINE FARM, CRAWFORD CO., PA.

When planted, however, it makes a more rapid growth than any of our native trees. We have specimens here about twelve years old that are large enough for three fence posts. It does not suffer as much from insect enemies as in its native territory.

This giant legume is over eleven feet in circumference, three feet above the ground and while still in good state of preservation is beginning to show evidence of decline. It is our purpose to plant locust sprouts from time to time as wind-breaks. Their value as timber, their extremely rapid growth and the ease with which they can be started are factors in their favor. Aside from this the locust is a beautiful tree and its fragrant bloom in late spring adds to the glory of the farm. If any one has a larger locust tree, let us hear from you.—J. T. Campbell, Crawford Co., Pa.

Farm Counselor Department



By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Can a Poor Young Man Succeed?

The following query was asked the other day at a farmers' institute: "Can a young man with little money but with strength and good health begin farming and succeed as easily as his father and grandfather did?"

Yes, if he has another asset his father had, a good, efficient wife, and provided also they are willing to begin as their parents did, at the beginning. The trouble usually is that young people want to start in life under circumstances which their parents have been a life-time in attaining. Success must always be earned. You can't inherit it nor purchase it. The price is hard work, patience, self-denial—a price too many are not willing to pay. There are examples everywhere of the successful efforts of European emigrants in farming and home-making. They are not used to our comforts and luxuries when they come here, hence do not have to "come down" to it and are happy in their efforts; more than that, they are usually successful.

It is probably not possible for the inquirer to start on a first class, fully-equipped farm with modern buildings and furnishings and pay for it from the proceeds of the farm; at least it requires extraordinary ability. That kind of proposition represents the result of the efforts of a life-time. I have in mind the following concrete example which will illustrate a kind of success possible:

A young man and his wife bought a little run-down, dilapidated place of thirty acres, fifteen years ago. The buildings were in bad condition and the land was covered with weeds and bushes. The old rail fences were of no use. An orchard of forty trees had received no attention for years. They agreed to pay eight hundred dollars for it. Between them they had two hundred dollars which they used in "setting up." They were people with a vision. They planned, and dreamed maybe, but all the time their efforts were directed towards a given purpose—that of improving the land and developing a good home. The apple trees were pruned and the soil cultivated. The land was cleared of bushes and stone drains put in a five-acre field needing it. Apples, potatoes and poultry were their first products. Later cows were added, and now first-class butter sold at a high price adds to the income.

Space will not permit a full recital of their work, but now, after fifteen years, it is a model little farm. The buildings are in good repair. The house is supplied with running water and bath room. A lighting plant was installed last year and they plan to put a heating system in this year. They independently refused three thousand dollars for their farm last summer. This increase added to the value of personal property makes a satisfactory total in money value for their labor. But more than this, they have a home, free from debt—something that brings a feeling of satisfaction and security that is worth the long hours and hard struggle. It is this kind of effort and success that has always developed the strong sturdy characters of the country.

The secret of their success—if there is a secret—was seeing in the beginning the possibilities of the place, laying plans and then following those plans. They have had disappointments and failures, but these only add fuel to the flames of a passion to conquer difficulties. Necessities first, luxuries later, has always been the motto of the successful. We cannot reverse this order and succeed in any business.

The Soil's Twin Needs

It is encouraging to note among farmers the increasing recognition of what may be called the twin needs of eastern farms, lime and phosphoric acid. Both have been discussed in this department more than once, but several new queries have been received lately, especially about phosphoric acid. A summary answer follows:

On dairy and other stock farms the economical method of using phosphoric acid is to use acid phosphate freely in stables and on the manure pile, using about a quart per animal per week. This partially prevents fermentation and the escape of the ammonia, adds the element lacking in manure, and in summertime, tends to prevent the breeding of flies. Some are using the powdered, untreated rock known as floats for this purpose and claim good results. I think the majority of eastern farmers find the acid phosphate most effectual and economical.

Queries would indicate an increasing interest in the use of Thomas slag, or phosphate powder. This material carries about 17 percent. phosphoric acid and 32 percent. lime. This is a splendid material for wheat, grass and fruit trees and plants, used in connection with the other needed elements. It should be bought for about one dollar per unit, possibly a little more where long hauls are necessary. Do not figure too much on the value of the lime, as lime can be bought at a much cheaper price. Pure ground bone is a good carrier of phosphoric acid and ammonia, but is rather expensive for general crops except grass and fruit trees. It is a good thing with which to top-dress permanent pastures. Acidulated bone is scarcely ever an economical thing to buy.—R. P. K.

A PROFITABLE SECOND CROP

The same field that produced a "banner crop" of corn in 1912 yielded a "bumper crop" of rye the following summer. Immediately after the grain was cut, I removed it from that field and prepared the soil, plowing it deep, and sowed buckwheat in two acres. In October, I harvested the buckwheat and thrashed eighty bushels of seed. The labor was paid for when I gathered my honey, for the bees almost lived on the buckwheat blossom.

After the buckwheat was harvested and thrashed, I spread that straw on the two acres, gave it a top dressing of sheep manure and prepared the soil, which was then seeded in rye. The buckwheat experiment has proven to me that I can make my acres yield a double profit every year. I work my land in rotation, except that one field, which has been heavily fertilized for five years and that field always produces a banner crop of anything. Corn will follow rye and then I will rotate again. —A. L. Rout, Bucks Co., Pa.

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WE HAVE GIVEN AWAY 157 PONIES

HERE ARE THE NAMES OF A FEW OF OUR 157 LUCKY PONY WINNERS

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"Sweetheart," Lillias E. T. Howe, Nevada Co., **California.**
"Pippin," Doris Navarette, Fairfield Co., **Connecticut.**
"Pal," Julia Federer, Champaign Co., **Illinois.**
"Heinie," Clarence Niemoeller, Bartholomew Co., **Indiana.**
"Justin," Norma Thorson, Palo Alto Co., **Iowa.**
"Jerry," Cleta Johnson, Douglas Co., **Kansas.**
"Keno," Vanessa Lykins, Bourbon Co., **Kentucky.**
"Merry," Isabelle Whitcraft, Baltimore Co., **Maryland.**
"Clipper," Adelaide J. Stever, Bristol Co., **Mass.**
"Peter," Charley Mahoney, Chippewa Co., **Michigan.**
"Star," Clarence Grover, Trail Co., **Minnesota.**
"Mac," Ruth Mead, Saline Co., **Missouri.**
"Reggie," Clifford Smith, Yellowstone Co., **Montana.**
"Bumps," Barton Lewis, Dawes Co., **Nebraska.**
"Busy," John H. Albrecht, Jr., Camden Co., **New Jersey.**
"Sultan," Donald M. Robinson, Saratoga Co., **New York.**
"Silver-Tips," Georgia Lee Barringer, Stanley Co., **N. Car.**
"Paddy," Grace McGogy, McIntosh Co., **N. Dakota.**
"Flo," Lloyd Thomas, Allen Co., **Ohio.**
"Peaches," Alicia M. Davenport, Klamath Co., **Oregon.**
"Dapple," Ernest L. Heckert, York Co., **Pennsylvania.**
"Irene," Colgate M. Searle, Kent Co., **Rhode Island.**
"Cupid," Edna Evans, Moody Co., **So. Dakota.**
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"Zip," Ella L. Fullam, Randolph Co., **Vermont.**
"Lulu," Louise Damron, Benford Co., **Virginia.**
"Scotty," Catherine Rohrbeek, Pacific Co., **Washington.**
"Princess," Geneva Holt, Nicholas Co., **W. Virginia.**
"Polly," Alfred Hokenstad, Dane Co., **Wisconsin.**

NOTICE WE PRINT THE NAMES OF 30 OF OUR 157 LUCKY PONY WINNERS. We would gladly print the whole 157 names if we had room for them here, but we will send them to you just as soon as we hear from you. Possibly some of these happy children live in your county or a county near you and, if so, you probably know them because our Lucky Pony Winners are the best known children in their neighborhoods. However, it doesn't make any difference where you live; if you send us your name and are the lucky child to get "White Sox," he and his whole outfit will be shipped without one cent of cost to you. If you send us your name the day you read this, we will send you 1,000 votes for "White Sox" and also a big surprise that will double your chances of getting a Shetland Pony. We haven't room to explain it here, but we will tell you as soon as we hear from you. Remember, you can't get "White Sox" until you send us your name and become a member of the Pony Club, so sit down and write us at once. Don't miss this grand opportunity!

EVERY CLUB MEMBER GETS A PRIZE.

Every single child who sends us his name and joins our Pony Club will receive a handsome prize of his own choosing. Besides the Pony Outfit (and the Big Surprise we have for you), we will give bicycles, diamond rings, sewing machines, rifles, cameras, gold watches, flashlights and many other wonderful rewards that you never could get until now. Of course, "White Sox" and his dandy Outfit is the best prize of all and you have the same opportunity to get him as any other boy or girl if you send us your name now.

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Our ponies are given away so quickly that you will be more sure of getting this one if you sit right down now and send us the coupon with your name and address or a letter (either way will be alright). The work we require you to do to be a full-fledged Pony Club Member, eligible to get "White Sox," is so easy that any child who could drive a pony can do it. We shall write you promptly just as soon as we hear from you.

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Care and Treatment of Seed Potatoes.

By E. A. ROGERS,
Cumberland Co., Maine.

There is so much complaint of poor seed potatoes being sold thruout New Jersey, Pennsylvania, Delaware and Maryland, and no doubt the same holds true farther South, that one would wonder whether there are any real good seed potatoes grown. At an informal meeting held in the New Willard Hotel, Washington, D. C., on December 18th, this question of good seed was much discussed. This meeting was announced by Prof. Orton at the morning session of the hearing on the extension of the potato quarantine. He requested all those who were interested in the matter of good seed to attend. The talk drifted largely to the education of the northern seed grower as to ways and means whereby he could produce potatoes for seed that were true to name and free from all disease.

The writer agreed with all that was said but could not help thinking that the grower in the South, purchasing carefully grown seed, is in just as great need of education as to its proper preparation and handling as is the Northern grower in how to produce it.

One man can take very poor seed, and by properly preparing it, get better results in the field than his neighbor, who with as fine seed as can be produced anywhere in the North, does not properly fit it for planting. A little carelessness, so slight that one would not even think to call it carelessness, will cut down the yield per acre from a good paying crop to a ruinous loss.

In the spring of 1913 the writer finished cutting the seed for one field about nine o'clock in the morning, having about thirty-four bushels to finish the field. These had been dusted with sulphur as fast as cut and spread upon the potato house floor, about six inches deep. When enough were cut to finish the field we begun sacking the cut seed, one bushel in a sack while the man got the team.

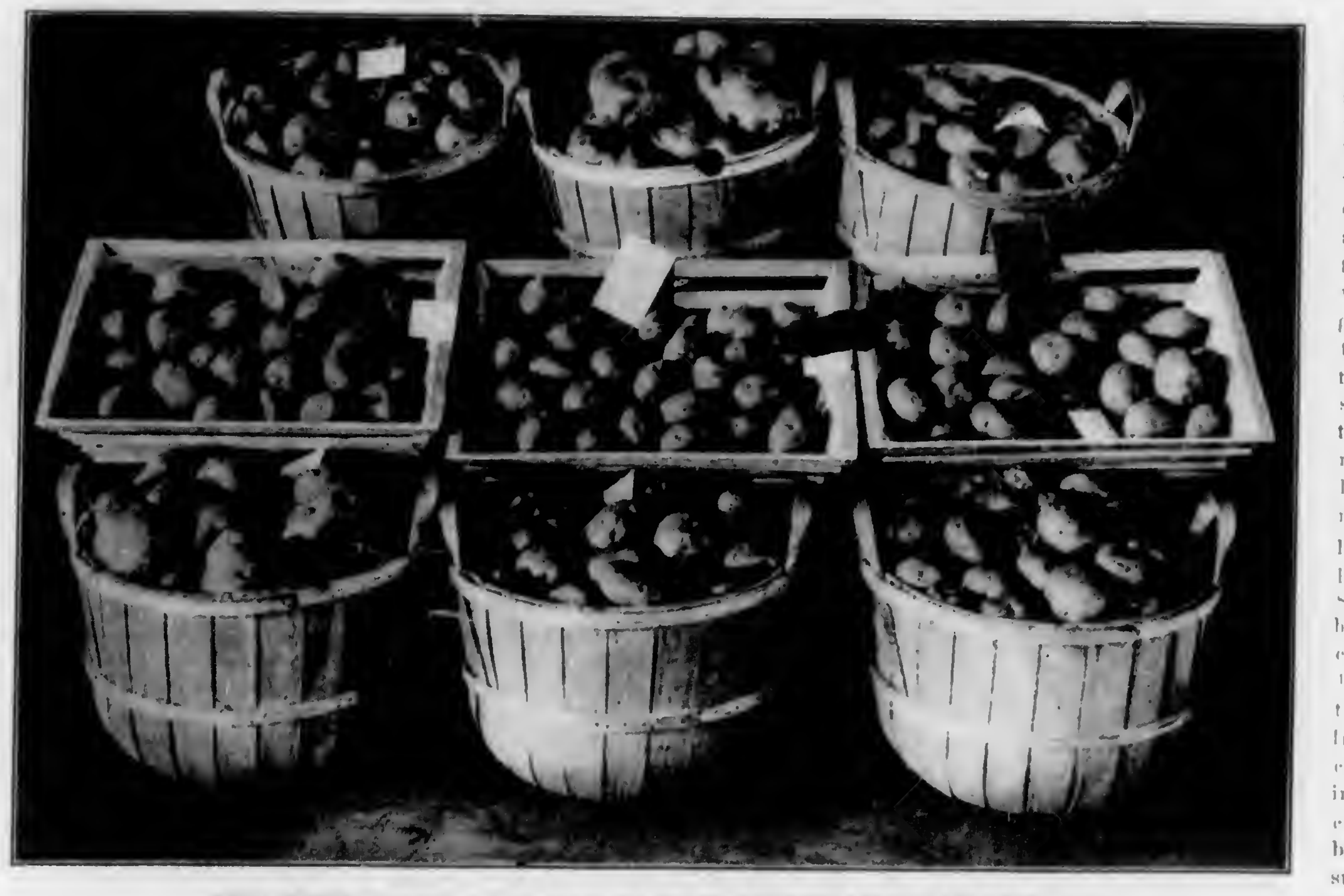
The first load, including fertilizer, was sent to the farther end of the field with the instructions, which had been given repeatedly before, to place both fertilizer and potatoes along the end of the field, where they would be worked across the field, and not on any account to put one bag of seed on top of another. The second load was sent out in the same manner while the writer oiled up the planter, which was started about ten o'clock. About five in the afternoon we had worked over to where the man had thrown one bag of seed on top of another, directly contrary to my specific instructions. I called his attention to it, telling him that there was great danger that the seed in the under bag had heated. The ground was moist and the day was warm, and while I could not determine that the seed had heated I felt such might be the case. As it was a case of using them or not finishing the field that night, I used them.

FIVE HORSE-POWER TRACTOR AT WORK ON FARM OF E. P. GARRETSON, ADAMS CO., PA.

Now for results: It took just a bag of seed to a row and the row in which this sack of seed was planted did not show over 40 percent of a stand of plants. In the hurry of digging time I did not weigh the product of this row and those on each side of it, but I know the loss was not less than 125 bushels per acre. Had the whole field come as badly as this one row, I should have abandoned it altogether; but there was almost a perfect stand of plants over the whole field except this one row. I cite this case to show that the Northern grower is not always to blame and while he needs education, and needs it badly along the line of producing seed true to name and free from disease, those in the south who buy it are equally in need of education as to the preparation and care of it after it comes into their possession. The heating of seed after it is cut is so deadly to its germination that care must always be used or loss is sure to follow.

I doubt if there is one man in a dozen who can cut seed potatoes from one week to three ahead of the planter and keep them in condition that will give 90 percent of a stand of plants; from 60 to 75 percent will be nearer the actual result, even for the careful man. Again, seed taken out of a cold cellar, where the eyes have not begun to show signs of starting, is not fit to cut and plant. There can be almost as much loss by this method as by the seed heating.

Potatoes intended for seed should not be allowed to sprout in the cellar where they make long white sprouts, if possible to help it, yet I had rather take them when in this condition and cut and plant with all the loss of vitality which has taken place in growing these sprouts than to take them when so hard and cold that the eyes show no signs of life. In the first case, most of the seed pieces would make plants, but not as strong as would have been the case could the plants have come from the first sprouting. In the second case, cutting and planting these hard, cold tubers would be most sure to result in a large percentage of missing hills which might be as high as 50


PRIZE-WINNING POTATOES AT THE MAINE SEED IMPROVEMENT ASSOCIATION SHOW, 1913.
The center till shows sample prize winning Norcross. The till on right showing World's Wonder won second on late variety. Bushel basket on floor, to right, is Norcross. Bushel in center on floor is Snow. Balance of exhibit, World's Wonder, Shown by E. A. Rogers, Cumberland Co., Me.

percent. This is much more apt to take place in the North where potatoes keep very much later in this condition than they do in New Jersey or farther South.

In bringing seed potatoes from the North, they are more or less warmed up in transit and the germ of life in the eyes is becoming active. In my next article I will treat of the proper disinfecting and preparation of seed tubers and the separation of mixed Irish Cobblers, which cost the Southern growers an immense sum each year.

Note.—This is the first of a series of articles on care and treatment of seed potatoes by Mr. Rogers, who is a well-known authority on potato growing. —The Editor.

The Deere Farm Demonstration.---II.

By THE COUNTRY PARSON.

The purpose of the Deere Farm demonstration outlined in our previous article is very clearly stated in Chapter V of the "Story of the Soil." A worn-out farm, without the use of barnyard manure and the help of what my friend John calls "the most scientific fertilizer mixer ever invented" or a cow, and without the purchase of one pound of acid phosphate or ordinary mixed fertilizer is to be made "as productive as it ever was, even in its virgin state." When restored to productive fertility, this land is to cost not more than $50 per acre and is to regularly pay a reasonable interest on the capital invested.

This problem was complicated with peculiar difficulties. About 100 acres of the 500-acre farm had been cleared. This, however, did not mean that it was possible to divide the place into seven 60-acre fields, lay out the work, start the teams and apply the calcium, phosphate and kainit before putting in a crop. A large part of the fields had been permitted to grow in scrub pine and sassafras, for the poorer parts of the farm had been gradually abandoned and cultivation confined to those portions which were best able to produce a crop. The inevitable result was a number of scattered and extremely irregular plots of ground, which had to be cleaned and squared out before they could be tilled to advantage.

Labor was fairly cheap. Colored help could be had for 75 cents a day and board, or $1 to $1.25, if the men boarded themselves. Accustomed to chop and grub, these hands were fairly effective, altho they ordinarily used tools which were so dull and clumsy that a Michigan lumberjack would scorn to be seen with them. When it came to handling teams and modern machinery, they were lost. Driving a six-horse team hitched to a Conestoga wagon, army fashion, with one line, presents no difficulty to the average colored farm hand in Maryland, but this does not mean that he can handle four horses hitched abreast to a disk harrow, not to speak of handling a checkrow corn planter or a seed drill.

The manager of the Deere Farm had these and other aggravating difficulties to contend with. It was a case of keeping the teams going and doing the best you can. Nevertheless, plans were made for the laying out and squaring up of the farm into seven 60-acre fields, leaving some wood lots and permanent pasture land. One of the first moves was to get a stand of alfalfa in order to cut down the heavy feed bills for the necessary teams.

There are three fields on the main road which leads past the Deere Farm. The field nearest the house is No. 3. In the spring of 1911 it was planted to corn, without lime or phosphate, which should have been applied, had it been possible to do so. This field brought only 12½ bushels of corn to the acre, with a fair amount of fodder. In the spring of 1912 the ground was prepared with a disk harrow and sown to cowpeas. It was again impossible to apply either the ground limestone or the raw phosphate. The cowpeas did not do much. They were disked under in the fall of 1912 and the field sown to wheat, after two tons of raw rock phosphate and one-half ton of kainit to the acre had been applied. The wheat came up strong and green, wintered well and produced a fair yield of grain and straw. This wheat was used as a nurse crop for grass. A good stand was secured and at the time of my recent visit was being grazed by teams.

Field No. 1 adjoins field No. 3 on the southwest. It also fronts on the main road and has the same type of soil, a fairly heavy loam. Since it adjoins the timberland, it required more labor than No. 3. A considerable portion of it was cleared to square out the field. It was therefore also impossible to make any application of lime or floats. So far as it was cleared, it was plowed in the spring of 1911 and planted with corn. This portion of the field was sowed with cowpeas and soybeans in the spring of 1912, while the newly cleared portion was planted with corn. The corn was practically a failure, even on the recleared ground, and the soybeans, because of imperfect inoculation, did not make very good showing. Phosphate and kainit were applied in the spring of 1913, and the field again sowed to cowpeas and soybeans. There was a fair stand, altho the cowpeas looked rather yellow, which may be due to the phosphate or lack of lime.

A ROW OF MAPLES PROVIDES A WINDBREAK EVEN IN WINTER "FOLIAGE."

The other front field is of a different soil type, a Susquehanna gravel and Windsor sand rather than a Leonardtown loam. Last year it had a scattered stand of puny soybeans. It was planted with corn, which did not make much of a yield. A cover crop of cowpeas has been sown between the corn rows. So far as I can see, there has been no application of lime or phosphate. This field is interesting, because we here have the first attempt to use a cover crop on the Deere Farm, something which Dr. Hopkins might have done in 1911, instead of 1913, had he taken the advantages of our Maryland climate into account.

Field No. 5 lies to the east of field No. 3, back from the road. It is a beautiful piece of undulating loam. After being plowed in the spring of 1911, this field was sown to crimson clover and cowpeas, neither of which did much. The raw rock and kainit was applied in the spring of 1912, when the ground was prepared for corn. The response was prompt and the yield, while not large, was quite satisfactory. The promptness with which our Maryland soils respond to treatment and work is a constant source of astonishment to our German farmers, who come to Maryland from the West. They call it "a grateful soil." The results obtained by the Deere Farm demonstration would go to show that they are right.

The alfalfa field is the farthest field from the road. While it adjoins the Susquehanna gravel field, it has a heavier and more loamy soil. This, by the way, is another peculiarity of these southern Maryland farms: The presence on one forty-acre field of half a dozen different types of soil. That one formula for treatment should equally apply to all of them does not seem quite reasonable.

I first saw this field after it had been prepared for alfalfa by the application of 6 tons of ground limestone per acre, careful working and inoculation with soil procured from the Maryland Agricultural College. Wherever the inoculation had succeeded, the alfalfa was of a dark green color which is a guarantee of success. The stand however, was very uneven. I felt at the time that the spreading bacteria and the increasing effect of the heavy application of lime might perhaps save the situation. The outcome proved this opinion to be correct. This field now has a very satisfactory stand of alfalfa, altho the presence of sorrel and dewberry vines would indicate that the soil is still acid. If there is an acid subsoil, the stand will not hold, but the experience of one of our German farmers with alfalfa upon a Leonardtown loam would indicate that this apprehension is unfounded.

I am still mystified by Dr. Hopkins' manner of applying his three-ply formula. It is "raw ground limestone, raw phosphate and organic matter." Not one of the Deere Farm fields has received any lime excepting the alfalfa field. Am I justified in asking if this is done in order that the acidity of the soil may acidulate the raw phosphate? If this is the case, may I also ask, if instead of waiting three years before applying lime, and harvesting a crop, it might not perhaps be more economical to immediately apply the lime with acid phosphate, especially since lime is so essential to the growth of leguminous cover crops? Dr. Hopkins' formula makes no mention of kainit. It is applied with the phosphate because "in the absence of decaying organic matter, the potassium of the soil becomes available very slowly. The kainit furnishes both potassium and magnesium in soluble form and it also contains sulphur, sodium and chlorine." Since decaying organic matter, which makes the use of kainit unnecessary, may be procured by the use of lime, I am again unable to understand why no lime has yet been applied upon the fields of the Deere Farm.

Now, I believe that Dr. Hopkins, if given sufficient time, will make good his claims, but I am unable to see how his doing so will benefit the man with limited means who must make a living for himself and his family while improving his farm.

Here is the proposition. The 500-acre farm cost $5,000. The soil is certainly cheap enough. And $35 per acre is not too much to pay for lime, phosphate and kainit if the one application is not to be repeated for six or eight years. If we think of what farmers ordinarily pay for an annual application of commercial fertilizer, this is also cheap enough. But it means the spending of $3,500 upon 100 acres of a 500-acre farm, besides buying teams and implements, spending money on putting buildings and fences in repair, more money on clearing and squaring out irregular fields, still more money for feed for the teams and for the family living expenses, and then work and wait for three whole years before the farm is in shape to produce a halfway decent crop. Surely no man can go into such a proposition unless he is backed by some philanthropic capitalist. A cash outlay of $15,000 and three years work will give him only 100 acres of tillable soil to pay the interest charges of $900 plus taxes, before the farmer has one cent to show for his seed and labor.

Against this several things may be said. For instance, that it is not necessary that the farmer should buy so much land and come on a bare farm. Buying too much land, just because it is cheap, is a pitfall for most people who come to southern Maryland. Nor is it necessary to improve the entire farm at once. If the lime and phosphate are applied to a ten-acre field each year, the whole farm can be gradually improved. Besides, most of these people own their farms and have managed to make a living on them. If they can be shown the possibilities of their soil under proper treatment, they will have received a very real service.

This is undoubtedly true, and the neighborhood of the Deere Farm is beginning to show that the community is profiting by Dr. Hopkins' demonstra- this meagre encouragement. If a farm- tion. But we must not overestimate er can spend $350 a year to apply lime, phosphate and kainit upon a ten-acre field, it will take him ten years to cover one hundred acres. Before he has covered two-thirds of his farm, he must begin to make a second application. To this we must add the expense of growing and plowing under green fertilizer. At that rate it will take a man 20 years to restore to fertility the soil of a 100-acre farm.

After the second or third year there will be an increased yield of crops from the 10 or 20 acres first treated. This may be looked upon as clear profit and a part of it will be spent upon other fields. A stand of grass or alfalfa may also be secured. This will relieve our farmer from the necessity of buying feed for his team. If he can keep stock the manure, to a certain extent, will also relieve him of the necessity of buying kainit, the most expensive of the fertilizing materials. But the fact remains that the restoring of a worn-out farm to productive fertility is a

very slow and a very expensive process, impossible of accomplishment without cheap money and long-time loans. This brings us to the much discussed question of rural savings and credits. Dr. Hopkins is demonstrating two things at the Deere Farm, the possibility of soil restoration and the need of an agricultural credit system.

With all my admiration for the splendid results achieved at the Deere Farm, I have not yet been able to persuade myself that this formula, "lime, phosphate, organic matter," is a sovereign specific for every soil illness. Unfortunately, the impression is somtimes conveyed that such is the case. The work of our Maryland Experimental Station and our Field Demonstration Service, together with the experience of Southern Maryland farmers with lime, cover crops and acid phosphate persuade me that it is quite legitimate to ask: Is there perhaps another and a cheaper way to get at this thing—a way leading to the same goal, which may be followed by the man of limited means who must think first of making a living and second of soil improvements? While I may not be able to put it into three words, I think there is such a way. Whether there is or not, one other fact remains: The most important ingredient in every recipe is the calm, dispassionate judgement of the man who prescribes it.

A GIANT LEGUME

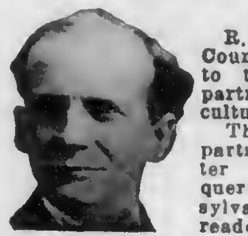
The accompanying illustration shows a large locust tree in the back yard at Woodbine Farm. The evidences of a dwelling are found on the spot where the little building stands, and this tree was planted by a pioneer, as locust is not a native to this section of country.

LARGE LOCUST TREE ON WOODBINE FARM, CRAWFORD CO., PA.

When planted, however, it makes a more rapid growth than any of our native trees. We have specimens here about twelve years old that are large enough for three fence posts. It does not suffer as much from insect enemies as in its native territory.

This giant legume is over eleven feet in circumference, three feet above the ground and while still in good state of preservation is beginning to show evidence of decline. It is our purpose to plant locust sprouts from time to time as wind-breaks. Their value as timber, their extremely rapid growth and the ease with which they can be started are factors in their favor. Aside from this the locust is a beautiful tree and its fragrant bloom in late spring adds to the glory of the farm. If any one has a larger locust tree, let us hear from you.—J. T. Campbell, Crawford Co., Pa.

Farm Counselor Department



By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Can a Poor Young Man Succeed?

The following query was asked the other day at a farmers' institute: "Can a young man with little money but with strength and good health begin farming and succeed as easily as his father and grandfather did?"

Yes, if he has another asset his father had, a good, efficient wife, and provided also they are willing to begin as their parents did, at the beginning. The trouble usually is that young people want to start in life under circumstances which their parents have been a life-time in attaining. Success must always be earned. You can't inherit it nor purchase it. The price is hard work, patience, self-denial—a price too many are not willing to pay. There are examples everywhere of the successful efforts of European emigrants in farming and home-making. They are not used to our comforts and luxuries when they come here, hence do not have to "come down" to it and are happy in their efforts; more than that, they are usually successful.

It is probably not possible for the inquirer to start on a first class, fully-equipped farm with modern buildings and furnishings and pay for it from the proceeds of the farm; at least it requires extraordinary ability. That kind of proposition represents the result of the efforts of a life-time. I have in mind the following concrete example which will illustrate a kind of success possible:

A young man and his wife bought a little run-down, dilapidated place of thirty acres, fifteen years ago. The buildings were in bad condition and the land was covered with weeds and bushes. The old rail fences were of no use. An orchard of forty trees had received no attention for years. They agreed to pay eight hundred dollars for it. Between them they had two hundred dollars which they used in "setting up." They were people with a vision. They planned, and dreamed maybe, but all the time their efforts were directed towards a given purpose—that of improving the land and developing a good home. The apple trees were pruned and the soil cultivated. The land was cleared of bushes and stone drains put in a five-acre field needing it. Apples, potatoes and poultry were their first products. Later cows were added, and now first-class butter sold at a high price adds to the income.

Space will not permit a full recital of their work, but now, after fifteen years, it is a model little farm. The buildings are in good repair. The house is supplied with running water and bath room. A lighting plant was installed last year and they plan to put a heating system in this year. They independently refused three thousand dollars for their farm last summer. This increase added to the value of personal property makes a satisfactory total in money value for their labor. But more than this, they have a home, free from debt—something that brings a feeling of satisfaction and security that is worth the long hours and hard struggle. It is this kind of effort and success that has always developed the strong sturdy characters of the country.

The secret of their success—if there is a secret—was seeing in the beginning the possibilities of the place, laying plans and then following those plans. They have had disappointments and failures, but these only add fuel to the flames of a passion to conquer difficulties. Necessities first, luxuries later, has always been the motto of the successful. We cannot reverse this order and succeed in any business.

The Soil's Twin Needs

It is encouraging to note among farmers the increasing recognition of what may be called the twin needs of eastern farms, lime and phosphoric acid. Both have been discussed in this department more than once, but several new queries have been received lately, especially about phosphoric acid. A summary answer follows:

On dairy and other stock farms the economical method of using phosphoric acid is to use acid phosphate freely in stables and on the manure pile, using about a quart per animal per week. This partially prevents fermentation and the escape of the ammonia, adds the element lacking in manure, and in summertime, tends to prevent the breeding of flies. Some are using the powdered, untreated rock known as floats for this purpose and claim good results. I think the majority of eastern farmers find the acid phosphate most effectual and economical.

Queries would indicate an increasing interest in the use of Thomas slag, or phosphate powder. This material carries about 17 percent. phosphoric acid and 32 percent. lime. This is a splendid material for wheat, grass and fruit trees and plants, used in connection with the other needed elements. It should be bought for about one dollar per unit, possibly a little more where long hauls are necessary. Do not figure too much on the value of the lime, as lime can be bought at a much cheaper price. Pure ground bone is a good carrier of phosphoric acid and ammonia, but is rather expensive for general crops except grass and fruit trees. It is a good thing with which to top-dress permanent pastures. Acidulated bone is scarcely ever an economical thing to buy.—R. P. K.

A PROFITABLE SECOND CROP

The same field that produced a "banner crop" of corn in 1912 yielded a "bumper crop" of rye the following summer. Immediately after the grain was cut, I removed it from that field and prepared the soil, plowing it deep, and sowed buckwheat in two acres. In October, I harvested the buckwheat and thrashed eighty bushels of seed. The labor was paid for when I gathered my honey, for the bees almost lived on the buckwheat blossom.

After the buckwheat was harvested and thrashed, I spread that straw on the two acres, gave it a top dressing of sheep manure and prepared the soil, which was then seeded in rye. The buckwheat experiment has proven to me that I can make my acres yield a double profit every year. I work my land in rotation, except that one field, which has been heavily fertilized for five years and that field always produces a banner crop of anything. Corn will follow rye and then I will rotate again. —A. L. Roat, Bucks Co., Pa.

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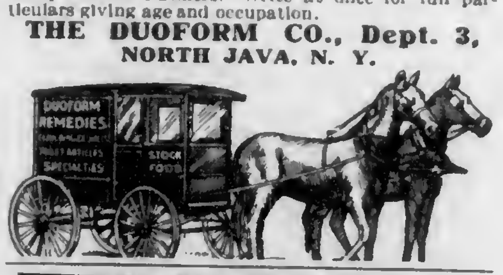

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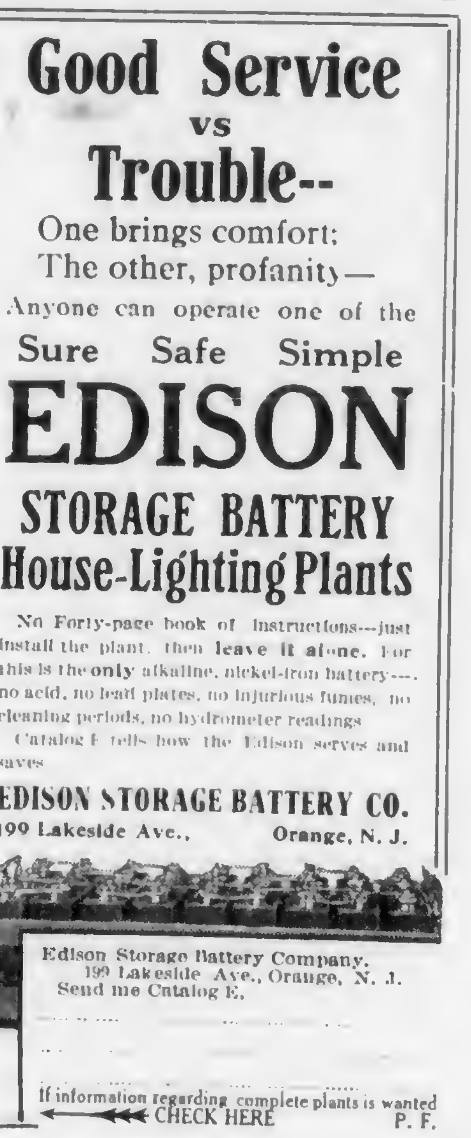

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Horticulture

HOW TO SPRAY

At the present time, fruit growing in the East is almost impossible unless spraying is resorted to. The grower must spray his trees in order to combat the rapid increase of their two great enemies, fungous diseases and insects, and thus compete with the product from the West, where conditions are more favorable.

The fungous diseases include mildew scab, blight, rust and rot. The great horde of insects may be placed in one of two classes: First, the chewing insects, which devour the whole leaf, stalk or fruit and second, the sucking insects, those which obtain the sap of the plant by piercing the outer covering with their tube-like mouth parts, such as the different scales, and plant lice.

Since the scales, etc., obtain their food from the inside of the plant they cannot be reached by contact insecticides, such as kerosene emulsion and lime-sulphur.

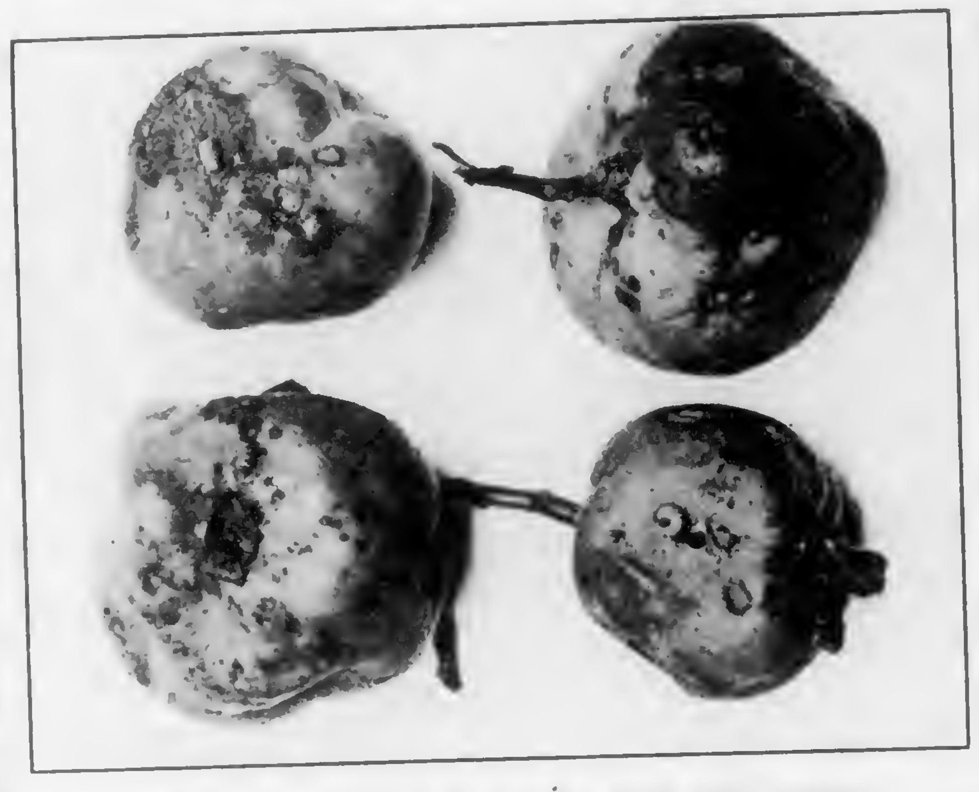
Let us treat the subject as it applies to the apple orchard in which it will be assumed there are old as well as young trees. On the old neglected trees the well known scale will probably be found. For this insect, I spray in the fall as soon as the most of the leaves have fallen. However, even if there are a few leaves on the tree, it is better to take advantage of a clear dry day. The bark must be dry, so that the mixture wil spread well over the entire tree, as it takes but few scales, if left, thoroly to infest the tree again. For this fall spray I use one of the miscible oils. Scalecide is the one I have used principally, 1 part scalecide to 12 parts of water with good satisfaction.

In the spring, I follow this with lime-sulphur before the leaves come. For the summer spray I rely on the Bordeaux mixture for a fungicide, with arsenate of lead added for the insects. This has been satisfactory except that we have experienced some trouble in the russeting of the fruit. Generally, I had warm quiet and pleasant days when I could spray over every side. I had no trouble then with the russeting; while the years of our greatest trouble from russeting have come when we had changeable catchy weather with wind often following showers. This led us to believe that the wind following spraying, especially if cold and raw, roughens the skin of the leaf and apple, much as a raw wind will roughen our hands if we get them wet, when out of doors. We know also, that if our hands are chapped, vinegar or salt or lime etc., will irritate the sore skin. Hence, I believe, that raw weather acts the same way with the apple trees, causing the russeting.

There seems to be considerable testimony to indicate that lime-sulphur may be the most desirable summer spray for peaches, but I am sure that many varieties of apples do not take kindly to it as a summer spray. For the young orchard, that has been well cared for from the start, I would advise the following: use fungicides as a summer spray only before the leaves have started, afterwards use only arsenate of lead as a summer spray. Our old orchards are too full of fungous for us to omit fungicides in the growing season. I first spray the summer mixture when some of the buds commence to show a shade of pink. The next spray follows when the petals have fallen off and the little apple is still upright so that we can force the spray into the blossom cavity but it must be given before the calyx tube closes. It is important that the blossom end of the fruit be well filled, for this is where the eggs are laid and we want the young insects first meal to be well flavored with poison. This spray is for the coddling moth thru which Maryland's experiment station claims 85 percent of her apples are destroyed every year.

If you spray too soon you will kill thousands of buds and very few moths; if too late, your time and material are practically thrown away, because the calyx has already closed. This spray is largely arsenate of lead because it dissolves readily, does not burn the foliage or apples when applied strongly and does not readily wash off in a shower. It is only when the fruits are so far matured as to make its use dangerous to the consumer that I first weaken the solution. Don't forget this spray is the most important one. The next spray is given two or three weeks later, followed by another about a month later. Another one can be applied August 1 to catch the late crop of coddling moth for desirable apples for exhibition purposes.

The person who depends upon printed directions to tell him just when and how and why to spray will not make a success of his spraying. Watch your bugs and be ready for business on short notice. If you know nothing about spraying machines and solutions write to some reliable firms that advertise in the farm papers and they will see that you are supplied. There is money for the fruit grower who sprays.—Geo. B. Summers, Montgomery Co., Pa.



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ANNUAL CONVENTION OF STATE HORTICULTURAL ASSOCIATION

The 1914 annual convention of the Pennsylvania Horticultural Association will be held in the Court House, York, Pa., January 20, 21, 22. A large well-lighted room near the R. R. Station has been secured for the exhibition of fruit, corn, dairy products and farm supplies of all kinds. The Dairy Union, the Live Stock Breeders, the Plant Breeders and the National Berkshire Association will meet at the same time.

Fruit Show.—Prof. F. N. Fagan, State College, Pa., will again have charge of the fruit show, and fruit should be sent in his care, to the Colliseum, N. George St., York, Pa. Bring or send your best specimens. Send some boxes and barrels if you can and do your very best to interest your neighbors as well. There is no money to pay premiums but awards will be made on the basis of last year's premium list and ribbons will be given for first and second place.

Our association was cut off without any state appropriation this year. The situation is most critical. Will you stand by and see the association go to pieces or will you give your loyal support right now when it is needed. How can you help? In several ways; by paying your dues right now; by attending the meeting and entering enthusiastically into the discussions; by sending fruit to the show, even if it is only a plate or two; by getting as many new members as you can. Will you do it?—C. J. Tyson, Secretary.

ASPARAGUS CULTURE

Plants do not assimilate the plant food which is around their roots until all their parts are working, that is, until the foliage portion has developed sufficiently to act in conjunction with the roots. Some plants may appear to do so but they do not. They merely draw upon the food supplies stored in the root or its adjacent parts the previous season. This is the reason why our annual plants cannot survive the winter. They have no ability to store food upon which to draw in the spring. Our perennial plants are able to do this and many of them send up growth before conditions can supply them with any food outside of themselves.

The early growth of asparagus shoots is due to heat and moisture acting with the life force and food material within the crown and stimulating it to activity at the expense of its own resources. The application of manure previous to cutting quickens this growth, not from the nourishment it gives but because it warms up the bed. The actual nutriment of manures and fertilizers more conveniently applied before the growing season are not used to any great extent until the bed is plowed and the foliage tops begin their laboratory work in conjunction with the roots. Hence it will be seen that the early harvest of spears is an exhaustive process. Water and warmth are essential during the cutting season and all operations aim to give these to the bed of cutting asparagus.

The grower gets the early warmth of the sun to the crown by opening a shoal furrow down each row over the crowns. This aerates and warms up the earth, stimulates the early start of the tips and allows the drilling in of the fertilizer which the plants will use after the cutting season. The soil is then thrown loosely back and the bed left level until the spears show even with the surface of the ground. Then the beds are made up in ridges which insure the whiteness of the spears and prevent the cutting knives from injuring the crowns. After the beds are ridged up and cutting has begun, cultivation should be continued between the ridge regularly. This is where the inexperienced grower fails and his yield suffers. A loose mulch of soil between the rows means that much moisture which would otherwise escape is retained for the use of the roots. It is also necessary that the surface of the ridges be mellow and free from crust but the ridges help to keep this broken. Between the periods when the ridger is necessary, many growers find it helpful to run a Breed's Weeder over the surface of the ridges. It scratches up the crustiness and destroys young weeds without injury to the ridges or spears.

The cutting each day should be clean. Undesirable spears should be cut and cast aside and not left to draw on the roots and cumber the bed. A mature bed needs three months of growth in which to rest from two or two and one-half months of cutting. The next year's cutting yield depends upon the rest. Where a bed has been cut by April 15th, it will be noticed that about the last of May there is a new and vigorous increase in spears. These relays are from other sections of the root formed during the preceding summer by new extensions of the root stock. If these relays of growth are to give a profitable cutting yield, the growing period of summer and fall must be maintained in full luxuriance.—M. Robert Conover, Monmouth County, N. J.

Weeds.—The Minnesota Experiment Station at St. Paul, Minn., has issued a bulletin on weeds, No. 129. While this bulletin deals primarily with the weeds of Minnesota, with but few exceptions those weeds are common in this state. Descriptions of the various weeds are given, and detailed drawings of their seed. This is a valuable bulletin.

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Above machines sold only for lack of use, and are great bargains. PACKARD, Box 44, Dover, Dela.

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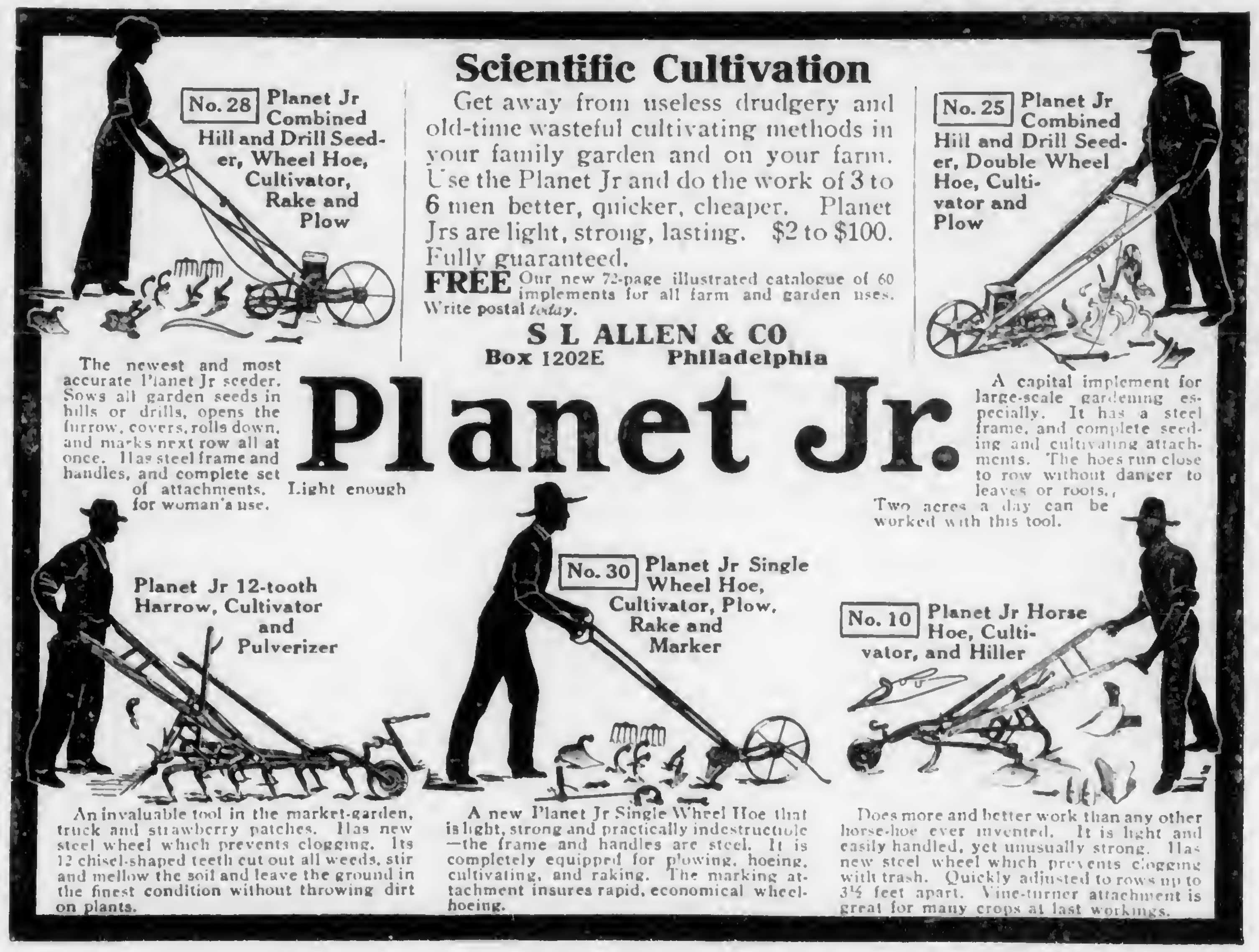

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No. 10 Planet Jr Horse Hoe, Cultivator, and Hiller

Does more and better work than any other horse-hoe ever invented. It is light and easily handled, yet unusually strong. Has new steel wheel which prevents clogging with trash. Quickly adjusted to rows up to 3½ feet apart. Vine-turner attachment is great for many crops at last workings.

The Dairy

WHY DAIRY FAILURES?

We are hearing much, and shudder very properly, over the waste of the government in navy expenses, but this amount is small as compared with the loss in feed material grown upon the farms, due to poor harvesting, inadequate protection, injudicious feeding, etc. Look at the amount of feed given to unprofitable animals, worth no more after eating $20 worth of food than before; of ill-bred horses, boarder cows and three-year-old steers weighing 1,100 lbs. We are talking of great improvement in quality of dairy cows, but it is as important that the dairymen learn to raise purebred foods and secure them, know what foods they can best raise, and what is their best preparation for profitable consumption.

We can well afford to look into this matter of the summer feeding of cows, and have less concern about raising soiling crops to help out the pastures. We can give a great deal more thought about a summer silo and filling it the last days of September for the summer to come. It was a dear lesson the advocates of summer soiling had in our section in 1913. Soiling crops will not grow very much in a long drouth, and the pastures had to be pieced out with purchased grain at $26 per ton, making dairying a pretty even exchange of milk for grain.

A JERSEY FARMER READY FOR THE TRIP OF THIRTY MILES TO THE CITY.

There is a commercialism going on that must be largely curtailed, or ruin is already in sight for thousands of dairymen. Farming on high priced land, buying instead of raising one's own cows, raising inferior stock, buying so much grain and other foods for the dairy, allowing pastures to deteriorate until a 30-cow dairy needs a 200-acre farm, cutting down the grain and crop acreage of the farms, and having at last only one thing to sell, and that, raw milk, at another man's price, is not conducive to dairy prosperity.

This commercialism will lead to our finding out that a herd of cows cannot keep up the fertility of a farm, that fertility has to be reinforced in some way. Each year more pasturage is required to the cow. Pastures will have to be cleaned up. They must be topdressed with lime, and if they cannot be put in crop rotation, then recourse must be had to acid rock and a sprinkling of potash. It is the ten acres of pasture to the cow that makes cheap farm lands. This brings us back to the beginning. How shall we start to inaugurate these demanded things? With crops and suitable feed combinations that reduce the cost to the lowest point, or with the better dairy, and feed what we have to better cows, and "grow into grace and full stature?" It is a great all round question. There is no end of successful modern dairymen, but all about them there are features in dairying that are surprising.—Chas. Mathew Morgan.

DAIRY INSPECTION LEGISLATION

Mr. Ernest Kelly, of the U. S. Department of Agriculture, is one dairy expert in inspection work who does not try to throw all the blame for poor milk on the farmer. In a recent report, he states: "No matter what safe-guards may be thrown around the production of milk if it is carelessly dispensed in the city the good may be all undone. A frequent fault is to expend so much energy on country inspection that the equally important subject of city inspection is neglected. A number of cities still allow 'bulk' or 'loose' milk, and many of them lay no restraining hand upon the filthy practices which are common to the trade. Stringent regulations and frequent inspections are needed for this particular phase of the question."

Another matter of considerable importance is the care of the milk after it has passed from the retailer to the final consumer. Many mothers should be instructed to be just as careful in washing and sterilizing milk bottles and cooling the milk in the house as dealers are in preparing their milk for shipment.

The legislatures of nearly all of the 48 states will soon be in session, and because of all that has been said and done during the past year, these sessions will probably be productive of much milk legislation. I believe that the laws that are certain to be enacted should measure up to certain standards. In the first place, they should be uniform; second, they should be simple; third, they should be enforceable, and fourth, they should be both necessary and just. As to uniformity the more closely all the States follow the lead of the New York City Milk Commission, the better. As to the second requirement, they should be easily understood by farmer, dealer and consumer, and admit of no possible misinterpretation. They should contain nothing to interfere with the speedy administration of justice, should they be broken, wilfully or otherwise, and the proper officials should be clothed with all necessary authority. No law should be placed upon the statute books unless circumstances absolutely warrant it, and all laws should apply impartially to every one connected with the handling of the milk, from farmer to last retailer.—D. T. Hendrickson, Monmouth Co., N. J.

DAIRYMEN'S LEAGUE

At a meeting of the Directors of the Dairymen's League, held at Albany, N. Y., November 28th, a resolution was passed that the League's books be closed February 1st, 1914, for the sale of stock to new members, and that no stock be sold unless agreements are signed at the time of subscribing for stock. The secretary was directed to communicate this information to the local branches, urging the officers and members to exert every effort to strengthen and complete their work of local organization before February 1st, and forward all subscriptions for stock and agreements to the Secretary as early as possible in order that they may be recorded and tabulated so the directors may know if they will be in position to act under the agreements this spring contract time.

We now have 290 branches, over 152,000 cows for which stock has been subscribed and nearly 9,500 stockholders, but agreements have been forwarded for only 67,000 cows. We are aware that many agreements are signed and being held by the local branches and it is important that these be forwarded that directors may know as early as possible when the 75 percent is secured and which is necessary before the directors can act in making sale of the milk. The directors can move only as fast as the members will lead.—Albert Manning, Secretary.

PENNSYLVANIA DAIRY UNION

The Sixteenth Annual Meeting of the Pennsylvania Dairy Union will be held at York, Penna., January 20th to 22nd, inclusive. The meetings will be divided into three sections—The Milk Dealers holding forth on the 20th; The Milk Producers on the 21st and the Butter and Cheese Makers on the 22nd. A full program has been arranged, including many excellent speakers, as Ernest Kelly of the U. S. Department of Agriculture: J. E. Dodge, Manager of Hood Farm, Mass.; N. P. Hull, Sec. Nat. Dairy Union; L. B. Cook, of the Dept. of Agriculture, and many others.

In connection with the meetings, there will be a show, as the combined efforts of the Dairy Union, The State Horticultural Association and the Live Stock and Plant Breeders. All of these associations will hold meetings in York during the same dates, as will also the American Berkshire Congress.

A large exhibit of dairy products is also expected. Liberal trophies and prizes will be awarded for the best exhibits of butter both dairy and creamery, and also certified and market milk.

PENNSYLVANIA HOLSTEIN FRIESIAN MEETING

The annual meeting of the Pennsylvania Holstein Friesian Association will be held at York, Pa., Jan. 22-23, with headquarters at the Colonial Hotel. Election of officers and business meeting will be held Jan. 23. On the evening of Jan. 22, Mr. A. L. Brockway, of Syracuse, N. Y., will give an address on tuberculin testing. Other speakers will be present and a good program arranged. All Holstein breeders of the state should try to be present.—W. M. Benninger, Sec.

Tuberculosis of Hogs.—Circular 201 of the Bureau of Animal Industry, Department of Agriculture, Washington, D. C., contains much valuable information relative to tuberculosis in hogs. It has been found that the following causes of hog tuberculosis are the most common: Raw milk and slime from creameries, hand separated milk from tubercular cattle, feeding behind tubercular cattle, feeding tuberculosis carcasses of various animals including fowls, feeding slaughterhouse offal and feeding uncooked garbage.

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A DAIRY farmer who does not use a cream separator is losing up to $15 per cow per year. Complete your dairy equipment by the purchase of an International Harvester cream separator—Lily, Bluebell or Dairymaid. These separators skim closely—leaving barely a drop of cream in a gallon of milk—and they will do it for years.

These machines are furnished with pulleys for the use of power. Belted to a small I H C engine, you have the best outfit it is possible for you to buy. Note the low supply can on I H C separators, the height of the milk spout which allows a 10-gallon can to be used for the skim milk, the strong frame with open base which can be kept perfectly clean, and the dozen other features which make these I H C machines the best.

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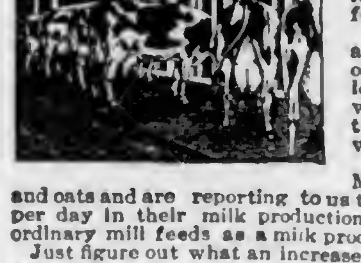

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What is the cheapest feed you can buy this season? That is the question that is interesting every dairyman right now.

Corn promises to be cheap and oats are selling at very low prices. Ground corn and oats will make you a cheap feed as far as cost per ton is concerned.

If you could buy a feed for mixing with ground corn and oats that would cost you about the same as corn and oats and that would increase your milk production at least $30 per month on each twenty head of cows, you would increase your profits $360.00 a year if milking twenty cows per month. If milking forty cows you would increase your profits $720.00 per year.

Hundreds of dairymen are using International Special Molasses Feed mixed in equal parts by weight with corn and oats and are reporting to us that their cows have increased from one to three quarts per day in their milk production. International Special Molasses Feed is far superior to ordinary mill feeds as a milk producer and conditioner.

Just figure out what an increase of 1½ quarts per day on each cow means for YOU. It means 240 gallons more per month from a herd of twenty cows. It means twelve gallons more per month from each cow. In order to get this result all you need to do is feed one-half International Special Molasses Feed and one-half corn and oats in the place of straight corn and oats. The increased milk production thus obtained makes the International Special Molasses Feed worth at least $25.00 more per ton than ground corn and oats.

Latest State bulletins give the following reports on their analysis of International Special Molasses Feed: State of Pennsylvania, protein 14.69; fat 5.74. State of New Jersey, protein, 15.82; fat 5.02. State of New York, protein 15.19; fat 5.58. This compares with an average analysis of less than 10% protein for ground corn and oats.

For each ton of International Special Molasses Feed that you will buy and use along with ground corn and oats you will make an extra profit of $20.00 over and above all extra cost.

Ask your dealer for International Special Molasses Feed. If he don't keep it for sale, then send us your dealer's name and address—we will arrange with him to supply you.

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DAIRY C

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CHAMPION BROWN KATE, 23022 lbs. milk in one year, WHITE BEAUTY, 60945 lbs. of milk in 5 yrs. Their sons head our herd. Bull calves from Advanced Reg. dams for sale. **Berkshires:** The big kind. Both sexes. All ages. **Penhurst Farm, Narberth, Pa.**

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Holstein Cattle of the most fashionable breeding. Bull calves only for sale.
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Perfect-fitting doors make the silo absolutely air-tight. That keeps the ensilage sweet and fresh down to last forkful. Quick, easy adjustment—no hammer or wrench needed. Strong steel hoops form easy ladder. Built to last a lifetime—of White or Yellow Pine, Oregon Fir or Cypress. You may pay more money, but you can't buy a better silo. Our motto is Quality. *Write today for free catalog.*
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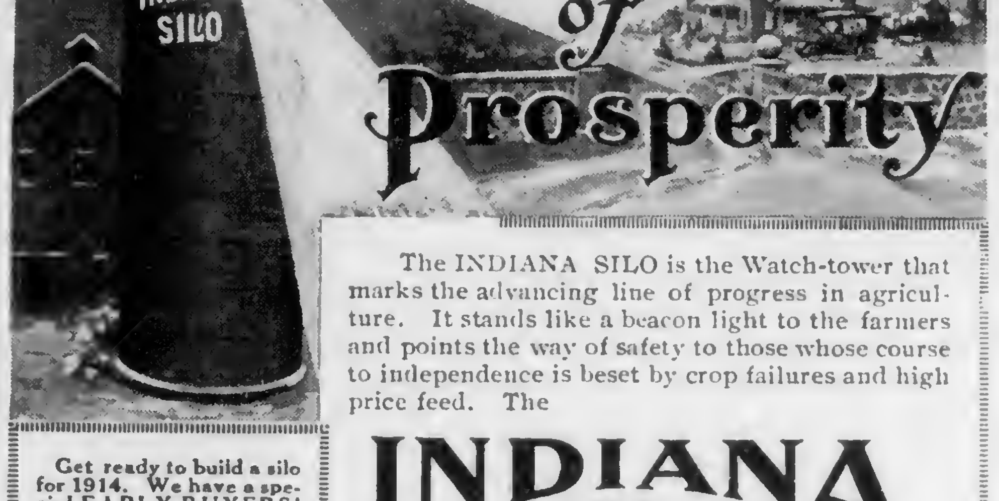

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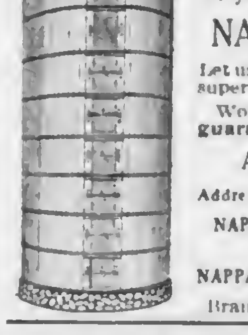
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THE BLANTON & McKAY CO., 423 Carr Street, Cincinnati, Ohio

Poultry

CUSTOM HATCHING

The beginner in poultry hatching work will do well to start with a small machine in order to learn the details of such work.

After operating lamp machines of different sizes for a number of years we purchased last year an 1800-egg capacity mammoth machine. We hatched over 4,000 eggs last season, and could just as easily have handled 5,000 while we were at it. As we are particularly interested in S. C. Rhode Island Reds and have a big trade for chicks we do not attempt a large amount of custom hatching. Last year we handled therefore only a little over 1,600 eggs from outside sources charging 2 cents an egg, and we refused a number of orders which we were unable to handle.

Our incubator uses the hot water system with which we have had excellent results.

Many of our customers after having their eggs hatched divide them up to different hens. In our own experience we set four hens and divided the chicks they hatched to two of them, giving the other two hens 25 chicks each from the incubator hatch. Comparison gave the incubator chicks the advantage in number brought to maturity over those hatched by the hens themselves. One woman who got 100 incubator-hatched chicks from us gave them all to one hen, bringing 88 of the number to maturity.

Customers should be educated to present only eggs which are uniform in size. We have handled lots of eggs embracing all sizes, but find that the more even in size the eggs are, the better they hatch. Invariably we have observed that those who tender nice even-sized eggs get the best results in hatching. Four of our customers gave us last season 150 eggs each. Of two who presented eggs of varying sizes, one got 66 chicks and the other 89. The other two got 96 and 110 chicks, respectively. After we got to understand the machine we found it easy to hatch 75 or 80 per cent of fertile eggs.

With a little practice, perseverance and persistence one can readily make a success of custom hatching.—W. R. Burkholder, Lancaster Co., Pa.

CORRECTING FEATHER-EATING

There is no more disgusting habit into which poultry can get than that of feather-pulling. This is generally started in half grown chicks when overcrowded. Richard Woods, a prominent English authority, once said that the nauseating habit of eating feathers can scarcely be called a disease; but that it is a subject worthy of attention, since healthy stock never, or very rarely, at all events, pluck and eat each other's feathers. He claimed that overcrowding is the most potent contributing factor, and that overfeeding, as well as giving too much animal food, is calculated to engender this vicious habit.

During the molting season fowls throw off imperfectly formed feathers, and these lying about are picked up by the chickens, creating a morbid desire for the peculiar bloody matter of which feathers in the embryo state are composed. The presence of parasites is thought to promote and foster the bad habit. Other fowls, seeing the insects, pull out the feathers to consume the parasites, and in doing so acquire a taste for the equally succulent constituents of feathers. When once the blood and fatty matter of the feather of overfed fowls has been tasted, it is almost impossible to check the desire for more. Habitually idle birds are the most given to this unnatural and vicious habit, and other birds often acquire the practise from these. The attack is generally first made upon the male birds, and it is surprising to see how patiently they will stand and allow their consorts to pluck them bare.

Some years ago the poultry department of the New York Experimental Station made a number of tests in this particular with varying success. Vaseline or lard (sometimes one and sometimes the other) in which had been mixed powdered aloes was applied to the feathers near the spot which had been picked bare, and on the new feathers which appeared. The Station reports that after continuing this treatment for some time the habit apparently disappeared, so that the birds were enabled to grow a full coat of new feathers. No change of any consequence was made in the food, etc., and the suppression of the habit was probably due to the disagreeable taste of the aloes. The means taken to discourage the habit necessitated frequent handling of the fowls, and would not pay with ordinary stock.—Boyd Michael, Atlantic Co., N. J.

THE GUINEA FOWL

Guineas are not a popular bird on many farms, frequently because of their roving disposition, and sometimes because of their noise-making propensities. Their roving tendencies, however, may be attributed largely to their taste for bugs and worms, many of them of the kinds harmful to crops, and this redeeming feature should overcome other minor objectionable features.

The plump, young guinea is the equal if not the superior of the ruffled grouse as a table fowl. City people are learning this truth. Two pound size young guineas are quoted by the commission houses at 50 cents each.

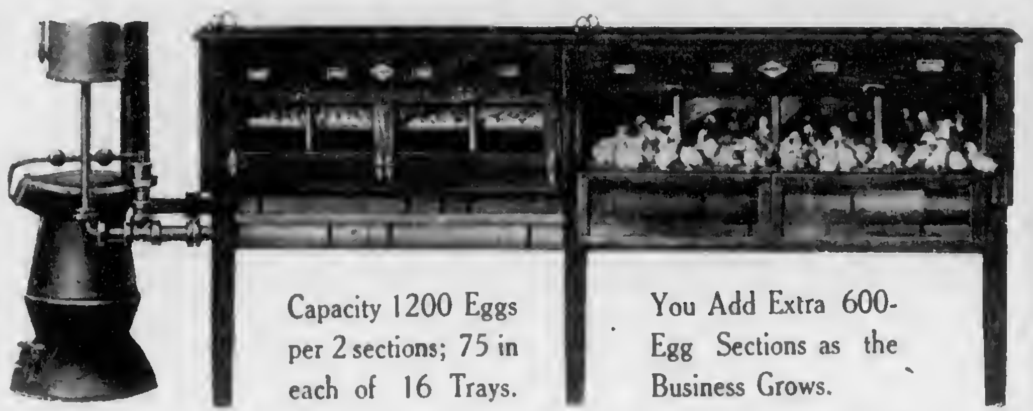
Aside from their value as insect destroyers and as a table fowl, guineas are excellent summer egg producers. Their eggs while not so large as those of the ordinary hen, have a better flavor and usually bring the same prices on the market. During the laying season from April to the middle of October one guinea fowl will usually produce from 75 to 100 eggs. During the summer of 1912 we received nearly $1.40 for the eggs from each hen. The average last summer was not so high ranging from $1.00 to $1.25 per hen.

It is not as expensive to feed a guinea hen as it is to feed the ordinary hen, inasmuch as they are smaller than chickens and much better rangers. They do not need any attention during the summer.—A. J. Legg, Albion, W. Va.

THE POULTRY HEAD LOUSE

The head louse attacks young chicks generally before they are feathered out, and is first found on the head with its claws or feeders sunk into the skin of the head. As they become more numerous, they attack the throat and neck as well. The remedy is simple, but it takes a little time. Each chick must have its head greased with lard, cottonseed oil or olive oil. You will have to look closely to see these insects. They are very destructive to chickens and must be controlled or exterminated if the chick is to be healthy.—A. C. Smith.

"For the land's sake, use Bowker's Fertilizers; they enrich the earth and those who till it."—Adv.



Capacity 1200 Eggs per 2 sections; 75 in each of 16 Trays.

You Add Extra 600-Egg Sections as the Business Grows.

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By Hatching Eggs for Other People And By Selling Baby Chicks

Add to that the extra profit in hatching stronger, sturdier chicks to sell or to raise yourself, and you will understand why some Poultry Raising Farmers make more money from Poultry than they do from their Fruits, Grain, Hay or Dairy

The Government reports show that poultry and eggs sell for more money than the wheat crop does. Every farmer cannot be a big grower of wheat but he can be a big producer of poultry and eggs and Baby Chicks with a

CANDEE INCUBATOR
Hot Water Sectional—Automatic

All that is needed is a clean cellar or basement. Each outfit comes in sections all built so that any handy man can set it up in a few hours. There is no danger from fire because the heater burns coal—safe as a kitchen range. Oil lamps are done away with. It takes five minutes to put coal on night and morning, at a cost of a few cents a day. Each 300-egg compartment is a separate machine with its own automatic thermostat regulator. Besides, there is an automatic regulator on the heater. This Uniform Hot Water Heat hatches stronger, sturdier chicks. It does not destroy oxygen as lamp heat does.

Any boy or girl or farmer's wife who has an hour or so a day can run the entire system. You can start with two sections and add extra sections as your business grows.

There are thousands of Candee Incubators, ranging from 1200-Egg capacity to 20,400-egg capacity, in use in this country. Nearly all of these systems hatch eggs for other people. There is room in every farming community for a custom hatchery. There is big demand for Baby Chicks.

If you are the one who is interested, write us. We will send you a book that tells you how to start a Custom Hatchery Business. Write today. You can start early with this outfit.

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Send for our Illustrated Booklet
Describing the Ideal Coal Stove Brooder with Automatic Regulator.
Heats poultry houses and broods large flocks. Superior to oil burners in safety, economy and amount of heat. It is made by a firm which has manufactured stoves for over 60 years. The adjustable hoover to the Ideal Coal Stove Brooder is regulated with pulleys and cords (note illustration). The height can be adjusted according to the temperature. Economy, plus effectiveness, is found in the Ideal Coal Stove Brooder.
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to all kinds of fowls, pigeons, chicks. Watch 'em thrive. Clean and appetizing. A properly mixed and balanced food for building flesh, bone and muscle without waste. Makes hens lay. Keeps poultry in "pink of condition." Cheapest food in the long run. *Ask your dealer*—accept no substitutes. Write today for free circular describing foods, seeds and appliances.
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Dressed meats, nuts, and butter. Shipment solicited by JELLIFFE, WRIGHT & CO., 284 Washington St., and West Washington Market, New York.

Ship your live poultry, dressed calves and hogs, potatoes, apples, etc. to us and receive highest market prices. FRED YOST & CO., General Commission Merchants, Newark, N. J.

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Book your orders now for Hatching Eggs, Chicks and Ducklings.
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Giant Bronze Turkey Eggs, $4.00 per 10. R. C. Red Eggs, $1.00 per 15. Fawn or pure white I. R. Duck eggs, $1 per 12. H. J. VanDyke, Gettysburg, Pa.

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MONEY MAKERS. Colored Muscovy, Pekin, Mallard ducks, geese, W. turkeys, guineas, Rocks, Wyandottes, Leghorns. Catal H. F. Kahler, Hughesville, Pa.

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Feed, Care, and Management of Draft Horses for Market.

By H. J. SEULKE, Assistant Proffessor Animal Husbandry, Pa. State College

By draft horse we mean one weighing over 1,600 pounds, of a blocky, muscular conformation, having plenty of quality and able to pull a heavy load at the walk or trot on city streets and stand up under the hard strain.

The cause of the demand for horses of this character is the modern commercial condition. The congestion of streets in our large cities, the bulk and weight of freight and goods to be moved from place to place and rapidity of transportation demands a horse of sufficient weight and strength to move these heavy loads. Dr. Johnstone says that "if the draft horse should be suddenly extinguished the railroads would be, temporarily at least, forced out of business for lack of power to transport freight from warehouse or factory to the cars." The desire of mercantile firms to out-do each other in the perfection of their delivery horses and in the show ring has also helped toward perfecting the draft horse and making him the most salable horse on the market today, and at prices relatively higher than those brought by any other class of horses.

Characters demanded by the market are weight, size, action, style and quality. Color also plays a part in determining the price of an animal. While weights of drafters are usually considered to begin at 1,600 pounds, yet weights most favored by purchasers range from 1,800 upward. The heaviest geldings ever shown at the International have not reached the weight of 2,400 pound. However, it is claimed that more nearly perfect geldings have been shown than the best stallion yet shown. The greater the weight combined with more shapliness and quality, the higher the price a market will pay for a drafter. The higher priced drafters are always those carrying all the fat that can be put on them.

Age is an important factor in the marketing of the drafter, for the market demands a horse that is mature and has a full set of permanent teeth, and yet one that has the most useful part of his life still before him. As we all know, the horse should have a full set of permanent teeth by the end of his fourth year, and is practically matured at that time. The age most desired on the market is between five and nine years. Besides being of the correct age, the drafter should be properly broken. A horse with harness marks will bring more money on the market than a green, smooth looking youngster. He should be well broken to work double, and often preference is shown for a horse that is broken to work both single and double.

Training should also come before a horse is marketed. A draft horse is worked in the commotion of the down-town streets of the city, and unless he can behave himself he will cause considerable damage. Therefore, a horse should be trained to be unafraid of trains, cars, automobiles, and any and all of the strange sights and sounds that will confront him on the street. It is not always possible for the farmer to train his horse in this respect, but the better trained the horse the more money will he add to his owner's purse when he is sold.

In order to produce a high-priced drafter it is necessary to feed the colt intensively from the time he is born, for any set-back he may have may cause him to be stunted. It is impossible to produce a big drafter on a limited ration for the draft horse is an artificial and not a natural product; and because he has been produced by heavy feeding, any variation from the rule will fail to produce as large an animal. The colt should have plenty of exercise until he is two or three years old, when he should be broken and from then on until he is sold he should help produce the farm crops.

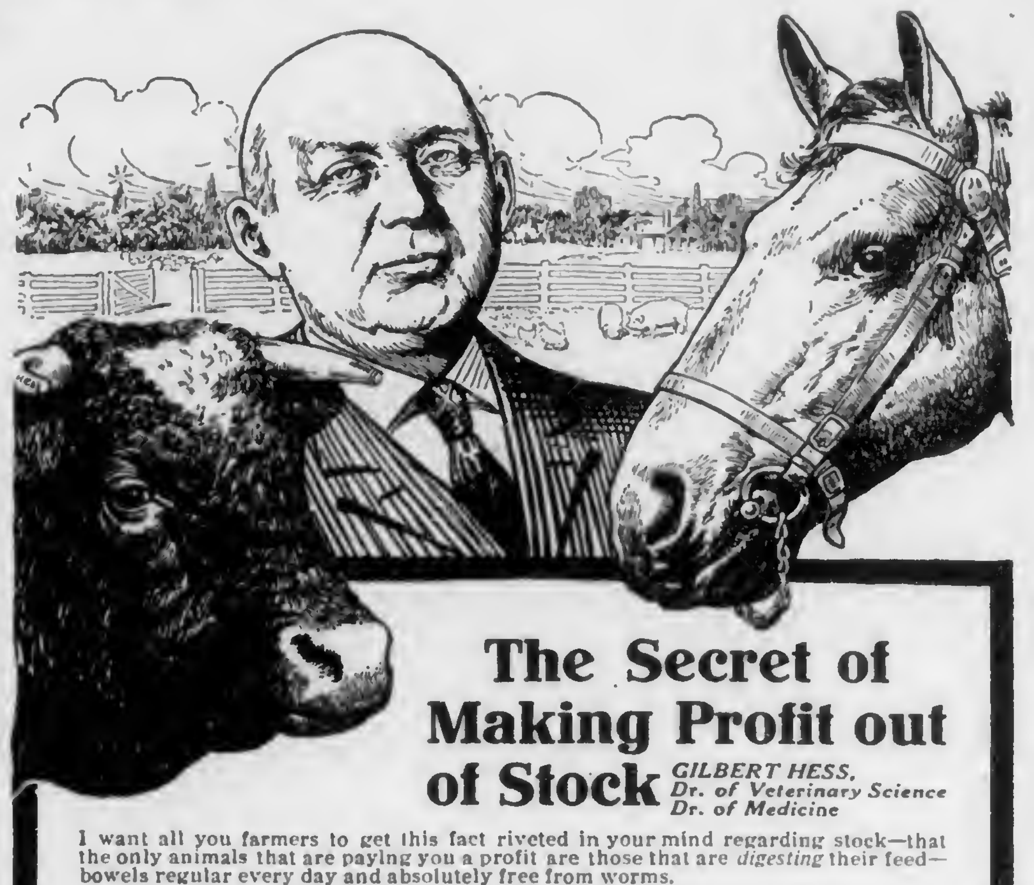
A few feeders manage their drafters as mules are generally handled; that is, turn 10 to 20 in one feed lot together. This is not a common practice, however, for horses are liable to injure each other when fed in this manner, and more economical gains are made when the horses are stabled. The more common practice is to tie the horses in stalls where they remain for all but the last week of the feeding period, when they are exercised a little each day to avoid any stockiness when they are put on the market.

The horses are usually bought, in a thin condition, in the fall, fed during the winter, being sold when prices are high in the spring. They are usually given a physic to clear their digestive tract, and their mouths are examined and floated if any sharp edges are found on the teeth. The feed boxes and pails are kept clean and the horses are kept well bedded. Little attention is paid to the grooming until the last ten days of the feeding period. The horses are fed grain morning, noon and night. The water is supplied twice a day and the hay is supplied in the middle of the morning and the middle of the afternoon. In order to insure good condition the horses are fed a little oil meal or from one-half to three-quarters of a pint of Glauber salts per head, twice a week. Many feeders give the horses blackstrap molasses during the last month of the feeding period, to give luster and softness to the coat.

The horses are gradually brought to a full feed, so as to prevent colic, and are fed entirely according to appetite, and, therefore, it is impossible or at least impracticable to give a ration by weight or measure. The following rations have given good results and represent a great enough variety of feeds so that any farmer can pick out a ration that suits his particular condition: (1) Corn, oats and mixed hay; (2) Corn, cottonseed meal and mixed hay; (3) Corn, cottonseed meal, corn silage and mixed hay. Clean clover or alfalfa hay will give faster gains than mixed hay in any of these rations, but owing to the fact that it is usually dusty, many feeders do not care to run the risk of loss by the use of clover or alfalfa.

The feeding period lasts from three to six months, according to the rapidity of the gains and the condition of the horses at the start. At the end of the feeding period the horses are carefully groomed, the feet trimmed, hoofs oiled, and the horses put in the best of shape for the sale.

With the above feeding and care, satisfactory gains are usually made, and owing to the fact that horses gain more rapidly and more cheaply when the value of a pound of gain is considered, many feeders are coming to the realization that they can make more by feeding horses than any other class of live stock, for it has been calculated that every additional pound on a drafter is worth twenty-five cents.



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I want all you farmers to get this fact riveted in your mind regarding stock—that the only animals that are paying you a profit are those that are *digesting* their feed—bowels regular every day and absolutely free from worms.

And it is just at this very time of year when stock are not in that condition, because they are cooped up, deprived of exercise and for the last few months have been on dry feed, which does not contain the laxatives and tonics so abundantly supplied by grass.

Dr. Hess Stock Tonic
Aids Digestion Makes Stock Healthy Expels Worms

Being both a Doctor of Medicine and a Doctor of Veterinary Science I formulated Dr. Hess Stock Tonic to aid digestion, make stock healthy and expel worms.

This scientific, 21-year-old preparation contains highly concentrated tonics that improve the appetite and aid digestion, laxatives for regulating the bowels and vermifuges that expel the worms.

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Philadelphia, Pa., January 17, 1914.

Farmers and the Currency Law. A number of the city papers in this state have shown considerable concern over the fact that the legislative committee of the Pennsylvania State Grange has directed a request to President Wilson that he appoint a practical farmer as a member of the Federal Reserve Board which is to administer the new banking law. An editorial in one of the leading Philadelphia papers characterizes the request as silly, and sarcastically remarks that "carpenters, ministers, lawyers, hod-carriers, electricians and telegraph operators" might as reasonably make a similar demand. Such efforts to ignore or belittle the just claims of agriculture in the formation and operations of the currency system of the country would not be worthy of consideration if they came only from an occasional newspaper editor. They are serious only because they seem to reflect the general attitude of the financial organizations, and even the law-makers having the currency legislation in charge, which has prevailed thru all of the discussion of this measure. Agriculture is the greatest wealth-producing industry of the nation. The combined value of farm property in this country exceeds that of any other industry. The prosperity and welfare of the farmers contribute more directly to the welfare of the country at large than any other single industry. The ability of the farmers to produce to optimum capacity affects not only every other industry of the country, but every individual in every city of the country thru the regulation of the costs of necessities. The government contributes directly to the welfare of every citizen whenever it takes steps to foster agricultural production. Yet the farms and the men operating them form practically the only class that is barred from doing credit business with the national banks. This condition existed under the old banking law, and it was not remedied in the bill recently passed. The government will advance money for the transportation of farm produce after it is produced and in the hands of crop traders and speculators, but it will not extend equal credit to the farmer to enable him to increase or cheapen his production. The government will take the commercial paper of the trader who may have a thousand bushels of wheat stored in a warehouse, but it will not take a mortgage on a farm whose value as security is a hundred times greater than the stored grain. It is because of this discrimination that the farmers are asking for a place on the governing board. In doing so, they are not asking for special privilege or class legislation but merely for just recognition and a square deal. The law-makers recognized the injustice of the provisions of the currency bill, but they were not willing to rectify it. Instead, they are now preparing to pass a rural credit bill or establish special banks for farmers. The Pennsylvania State Grange is to be commended for its enterprize and vigor in setting forth the just claims of the farmers. Had the National Grange shown the same measure of watchfulness and energy in representing agriculture before Congress when the present currency law was in the making, there might not be the present discrimination against the farmers or the need of a request for special representation on the governing board.

Country Roads On page 12 of this issue we publish a number of articles from farmers dealing with earth road improvement. We are receiving a great many communications of a similar character, all showing that there is tremendous interest among farmers in all parts of the state in improved roads. There never was a more favorable time for the State Highway Department to co-operate with local interest for good constructive road work. The rural districts are willing and anxious to do their part if they are given the right sort of support and are encouraged by an evidence of sincere effort on the part of the state authorities. There is an impression among the farmers that the present state road laws are a hindrance rather than a benefit to local road work. The state highway officials declare the present laws to be the best we have ever had. Good or bad, the laws cannot be changed until 1915. There is ample time for the State Highway Department to demonstrate not only its own efficiency, but also th efficiency of the existing laws and the regulations which have been put into force. The present temper of the farmers and road users indicates, however, that they will expect such a demonstration to be made during the present year, or there will be a general demand for a revision of the laws and a reconstruction in department plans. The plea of lack of funds cannot be urged as a legitimate excuse for inactivity. If there is not enough money to build roads under the system in force, the system must be changed. The amount of money available is more or less fixed. What the people want and what they have a right to expect is a system of state supervision which will turn the greatest possible proportion of the available money into actual road improvement. A machine that utilizes all of its power in keeping itself in operation is of mighty low utility value. Is the present state highway organization such a machine? Its work in the next twelve months should give the answer.

Potato Production A recent report issued by the Department of Commerce gives some interesting figures on potato production. It shows that the largest importation of potatoes in any single year occurred in 1912, when 13,750,000 bushels were imported. The next largest was in 1909, when 8,333,000 bushels were imported. The total quantity imported since 1900 is practically 37 million bushels, and the quantity exported in the same period is 16 million bushels. The average import price has ranged from 41 cents per bushel in 1902 to $1.09 in 1907 and $1.08 in 1911. The average price in the record year of 1912 was 52 cents per bushel, and in 1913, 93 cents per bushel. The average export price has ranged from 64 cents to $1.14 per bushel, while the average farm price has ranged from 43 cents in 1900 to 80 cents in 1911 and 69 cents in 1913. Importations came chiefly from England, Scotland and Ireland. Potatoes exported go chiefly to Cuba, Canada, Panama, Mexico and Columbia. Potato production is small in this country as compared with certain countries having a smaller area and a much less population. In 1911, the United States produced about 293 million bushels. In the same year Germany produced 1,263 million bushels; Austria, 426 millions; France, 424 millions; United Kingdom, 281 millions. The United States crop in 1913 supplied an average of 3½ bushels per capita, while that of 1912, the high record year in production gave an average of 4 1-3 bushels per capita. The domestic production in 1913, with 332 million bushels, was larger than in any other year except 1912, 1910, 1909 and 1904. The impression that last season's crop was seriously short is true only in comparison with these record years.

Better Seed Those who have made careful study of marketing systems and investigated the possibilities of direct marketing of farm products find one of the first reforms needed is in the matter of using better and more uniform farm seeds. Direct marketing, or any kind of co-operative marketing requires careful standardization of products; and there can be no standardization of products without standardization of seeds. The nurserymen and seed growers have long overlooked an opportunity to add to the value of their goods in this respect and they can add tremendously to the volume of their business as well as usefulness in advancing crop growing if they will put out seeds which can be absolutely guaranteed true to name and free from disease. The need of such seeds holds thru practically every class of vegetables, grains and fruits. It is strikingly illustrated in the difficulties potato growers have in securing seed true to name and of unmixed varieties. The progressive potato growers of Maine, who supply the bulk of the seed in this section recognize the need of improvement in this respect. As a result a "Potato Day" has been called, with public meetings to be held at Bangor, Me., January 27 and 28, for the purpose of discussing ways and means of improving seed potatoes as to purity, grading, storage, shipping, etc. In order to get the view of practical growers and meet the needs in growing sections, two representatives of the potato growers of New Jersey have been given places on the program and an invitation is extended to growers of all sections using Maine seed potatoes. The move is a most excellent one, and might well be followed by seed growers generally. Incidentally, the Bangor meeting should be well attended by potato farmers of this section and representatives of farmers' organizations using any considerable quantities of seed potatoes. It will be generally attended by Maine growers and it will give opportunity for a "get-together" meeting that should be of mutual advantage to both growers and seed men.

STATE CAPITAL NEWS

Butter, Cheese and Flour Census.—The new Bureau of Statistics of the Department of Agriculture, which is making a census of farms and farmers and their crops, is about to undertake some study of specialized industries in the farming communities of the State with a view to ascertaining the investments and the locations as well as to point out some opportunities. Studies are to be made of dairying with special relation to butter and cheese production. Butter production is general thruout the state with certain sections where there is more attention than others and an effort to get some reliable figures in regard to it will be made. The cheese industry is mostly in northern counties, but it is said to be larger than many suppose. The bureau is co-operating with the statistical bureau of the department of labor and industry in collating facts about the flour, grist and similar mills of the state. They will be listed and where they have been abandoned the water power situation will be noted. It is expected that the water power of these old mills will play a big part in the power of the future, especially for local electric plants. The engineers of the Water Supply Commission are also noting them in an independent inquiry.

Insurance Ratings.—People living in the country will be interested to a certain extent in the investigation being made into the practice of fire insurance companies by a legislative commission. The bulk of country properties are in mutual companies, which are not much concerned with schedules of rates in towns, but there may be some things which could be corrected. If people in this state are paying for losses sustained in Oregon and it is shown that risks are entitled to a lower rating it would not be a bad thing to know it. A good bit of writing and orating has been done about insurance rates and if the legislative committee will produce some facts it will serve the public to a considerable extent.

Dwindling Balances.—A good many people are of the opinion that the decline in the amount of ready money carried by state banking institutions as deposits of the general fund of the state is not as great a misfortune as some of the newspapers would have us believe. It is something of a jar to state pride of course not to be able to refer to the commonwealth as having ten or twelve millions of a balance on hand at any time and the state will, of course, lose the two percent interest but it will hardly cause the state government to suspend the payment of appropriations to schools, charities and other objects and we will not be hearing much about favored banks, etc. The best thing about dwindling of the general fund from $8,000,000 last May to something over $4,000,000 in January, is that it will bring legislators to their senses. The lawmakers have been carried away by belief that the state treasury was bursting with money and perhaps it was a good thing for Governor Tener to approve appropriations that will take up all of the available cash for then people will commence to see that if there is to be systematic appropriation for road building, increased allowances for the common schools, money for public works and other things which are for public benefit, there must be pruning of the list of so-called charitable institutions receiving state aid, and establishment of a policy of state aid for higher education. If the state is to continue its fine work at State College some of the other institutions will have to take less and probably give the state more in return. When it is considered that $16,855,391.31 was appropriated by the last legislature for charities alone, not including $2,625,000 for tuberculosis or $310,000 for new state institutions, some idea of the magnitude of these objects can be obtained. The whole state revenue for two years is but $65,000,000 and one fourth is voted for charity over which the State Board of Public Charities has a mighty limited control.

Horticultural Meeting.—Activities of the State department of agriculture, will be discussed at the meeting of the State Horticultural association at York, January 20. Reports will be presented to show the marked increase in orchards in the state and the danger in planting too many trees without experience in caring for them.

Over 400,000 Hunters.—According to estimates made by Dr. Joseph Kalbfus, secretary of the State Game Commission, more than 400,000 persons went hunting in Pennsylvania last year, about 325,000 being licensed hunters and the balance were farmers and land owners on their own land. The secretary says that this army of hunters bids fair to increase and that steps to secure further protection of game must be taken if any is to be left within a few years. He is also in favor of some regulation of the bounty law, which in his opinion, is not working out the way it should. Unfortunately, the income from the hunters' license which was expected to pay for the reimbursement of counties and for the work of the game commission is tied up over a question as to appropriation.

A Notable Program.—The program announced for the meeting of the State Board of Agriculture, as already indicated in this letter, will be one of the most unusual ever presented because every state official at the head of a department is to be represented. The relation of the various departments to agriculture, including taxation, health, schools and other objects is to be outlined. It is expected that many ideas regarding suggested legislation will be brought out.

Good Roads Plans.—The conference held here the latter part of the last week with the object of reaching a common plan for improvement of the roads of the State attracted little attention, but it bids fair to lead to something of prime importance to the rural sections. It remained for the organization known as the Good Roads Association to get together representatives of every organization interested in betterment of highways. The association was an advocate of the $50,000,000 bond issue but when that was beaten its officers were keen enough to realize that the people did not want it and set about to find the next best plan. There is a general belief at the Capital that the committee named will succeed in formulating a plan that will insure improvement of highways on a just basis, some regard for township as well as state highways and the commitment of the state to a definite appropriation program so that there will be no uncertainty as to funds. Questions of prison labor on roads and other details can be worked out. What is needed is a program.

Traction Engine Licenses.—State Highway department officials will be asked to go easy in enforcement of the cleat provision of the traction engine license by committees from various counties this month. The Lancaster county farmers have taken the lead and formed an organization which has drafted a statement setting forth how essential is the traction engine to the farmer and requesting that the subject be studied. It is expected that an attack on the law will be made as was done in Ohio.

More Orchards Listed.—State Zoologist Surface plans to add from 900 to 1,000 orchards to the list of those over which the state will exercise supervision. There are now about 1,000, of which 300 are demonstration orchards and the balance supervision, the latter being those over which the state inspector keeps an eye and which he can enter to show how trees should be cared for. Dr. Surface, because of increased appropriation for his work, will arrange for about 600 demonstration orchards and the rest in supervision classification.

New Township Road Bureau.—Coincident with demand of the legislative committee of the State Grange for the repeal of the township road law of the session of 1913, the State Highway department completed the organization of the Township road bureau, required by the act. Some months have been taken up in working out plans and it is now announced that the state will be ready to give aid, with plans and specifications as well as advice from engineers, to township authorities without cost.—Hamilton, Harrisburg, Jan. 12.

NEW YORK LETTER

Dairyman's League.—The annual meeting of the Dairyman's league was held in Albany on January 2. The following officers were elected: President, J. Y. Gerow, Washingtonville; Vice-president, F. H. Thompson, Holland Patent; Secretary, Albert Manning, Otisville; Treasurer, Louis M. Hardin, Sussex, N. J. It was announced that strenuous effort would be required to bring the pledges up to the required number before February 1, when the books close.

State Forestry Meeting.—The State Forestry Association will hold its second annual meeting in Albany on January 22. National and state experts will address the meeting, which will be devoted largely to the discussion of live questions, as a state wide forest fire law, land for forest preserves, opening of these preserves to proper uses, and the interesting of school children in forestry.

State Fair Commission.—Acting Lieutenant Governor Albert Wagner has been elected president of the Commission. Commissioner Huson was chosen vice president and A. E. Brown, secretary and treasurer. Assignment of the various commissioners to their duties at the next fair was made.

Holstein Men To Exhibit.—At a recent meeting of the Holstein Breeders' club of New York it was decided to make an exhibit for the first time at the National Dairy show in Chicago next fall. The National Holstein-Friesian association will meet in Chicago and the New York delegation will use a special train in making the trip. The place of meeting is the Sherman House and the time about the middle of June. E. A. Powell heads a committee to work up an interest in the meeting in this state. E. K. Munro of Camillus was elected treasurer in place of the late J. R. Hathaway. It was decided to incorporate the club.

State Grange Meeting.—The state grange will convene at Poughkeepsie on February 3 for a four days' session. On Tuesday evening there will be a public meeting under the auspices of the Dutchess County Pomona; on Wednesday the bi-ennial election of officers will take place. The sixth degree will be conferred on Thursday evening. Headquarters are at the Nelson House. The sessions will be held in the Columbus Institute. Howard E. Taylor is the man who looks after the assignment of rooms.

Orleans Fruit Growers.—The Orleans County Fruit Growers' Association has elected G. E. Snyder, of Gaines, president, Leslie Tanner, of Medina, vice-president, and Chas. G. Porter, of Albion, secretary and treasurer.

New Farm Bureau.—Ulster County Farm Bureau was organized recently at Kingston. Judge A. T. Clearwater is president. The Board of Supervisors has appropriated $1,000 for the Bureau on the condition that the Bureau raise $1,500 more.

The New Speaker.—Assemblyman Sweet, of Oswego, was elected speaker of the Assembly over Assemblyman Hinman, who was the stand-pat candidate. It seems now that Mr. Sweet may not be much more of a Progressive than is Mr. Hinman. Hinman has been chosen floor leader.—D.

COUNTY NOTES

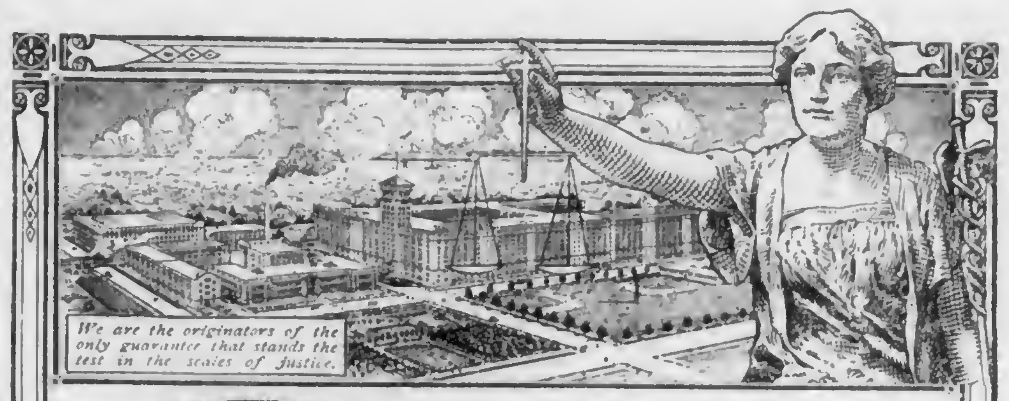
Warren Co., N. J., (N.W.) January 5. Have had very little snow. Storm is raging now. Hogs, 7½c lb. alive, 10c dressed. Calves, 10c lb; eggs, 36c doz; butter, 36c; corn ears, 80c per cwt; wheat, $1 bu. Threshing and cutting wood and most farmers do lots of milking in winter.—V. R. Loller.

York Co., Pa., (S.E.) January 6.—Weather quite changeable, not very much snow but a great deal of rain. Beef cattle still in demand, bringing 8@8½c per lb; wheat, 88c; corn, 71c; oats, 45c; potatoes, 75c bu; apples, 90c @$1.50 per bu; chicken 12c per lb; geese, 14c lb; butter, 33@38c lb; eggs, 30@32c doz. Considerable fall plowing is done. Most farmers busy stripping tobacco, hauling manure and doing repair work about machinery.—Clarence D. Emig.

Frederick Co., Md., (N.C.) January 5.—Very wet at present, rain for two days. Lowest temperature so far this winter about 20 above. No ice harvested yet. Very little snow up to date. Live stock in good condition; very scarce and high. Hogs scarce. Much meat spoiled by being butchered too early in the fall. Most of plowing done for corn. Very little left for spring. Farmers keeping manure hauled as fast as made. Eggs, 30c; butter, 30c; the latter very scarce. All milk and cream from this section shipped to Washington, D. C.—H. C. Fawley.

STATE BOARD OF AGRICULTURE MEETING

The 37 annual meeting of the Pennsylvania State Board of Agriculture will be held in the Caucus Room of the House of Representatives, Capitol Building, Harrisburg, Pa., Jan. 28 to 30. A valuable program has been arranged.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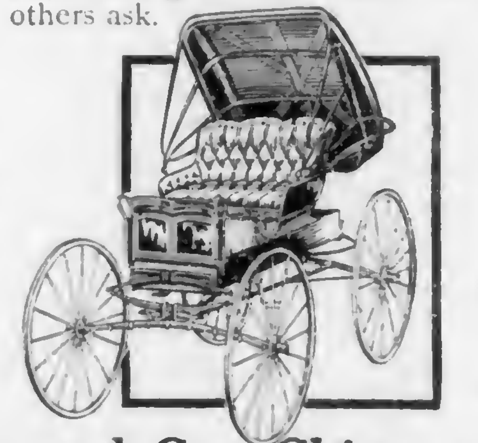

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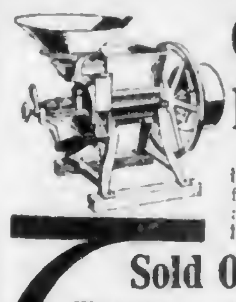

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Country Road Needs.

RETURN ROADS TO THE LOCAL AUTHORITIES

An editorial in the Erie Dispatch stated that the “Farmer's vote” was largely instrumental in killing the fifty million bond amendment, and suggested that it was up to the farmers to suggest to the highway department a way out of its financial difficulties. Inasmuch as this is a serious question, suppose we act on the suggestion and offer a few words of advice:

Next to public schools, public roads have a greater influence on the welfare and progress of a community than any other factor. We all want good public roads at the first possible moment and at the lowest actual cost. A perusal of the report of the highway department does not indicate that either of these results are likely to be attained by present methods.

The position of the highway department in its relation to the roads of Pennsylvania is exactly parallel to that of the French nation in trying to build the Panama canal, viz.: Too far away from the base of operations. Too many high salaried officials to superintend, whose salaries total more than the cost of the work done. Entire lack of knowledge means everything to the economical construction of roads in Pennsylvania, the same as it did in constructing the Panama Canal; and the lack of this knowledge cost the French nation millions of treasure and flat failure at last.

The present investigations in the state of New York of graft in its highway department is disclosing exactly what may be expected in our own state —no reflections are intended—but the conditions are the same and they lead to the very same thing as sure as night follows the day. Every office or position on the highway department is appointive, leaving not one single opportunity for a choice of the taxpayer as to whom he would have expend his tax and superintend local roads.

You say “But we have local road supervisors, elected by the people.” Yes, we have, but the new act passed July 22, 1913, takes away every particle of authority they once had and requires them to send specifications for every bit of work contemplated to highway officials and get permission from the department to do it.

One of the supervisors at the recent convention even made a motion that it was the sense of that convention that the present act of assembly relating to roads made the road supervisors of the state look like “thirty cents.” And many of them declare they would resign from an office that allowed them no authority and yet held them to a certain amount of responsibility and made of them a bumper between the taxpayer and the highway department.

This kind of legislation is not going to stand simply because people will not submit to red tape, delay, and inefficient method of handling so important and vital a local matter as our public roads. Some method can surely be devised to put the control of local roads where it belongs.

A highway department can, perhaps, advise, instruct and superintend, in a general way, the sixty-seven counties of the state as units, but when it tries to superintend every mile of road and every little culvert in the state it will do exactly like the French nation, spend millions of money in salaries and traveling expenses, etc., and then throw up the job and let the farmers finish it—as was suggested at the convention: “Take up a collection and repair the Ridge road.”

Now taxpayers, why allow a method that in the few years it has been in operation has shown so conclusively that it is impractical, expensive ,and totally unequal to the task of maintaining our roads even in as good repair as before? We would like to know why a public road system could not be operated on the same general plan as that of the public school.

Elect a superintendent of public highways, establish a small bureau for the collection and disbursement of auto licenses and other state money to be appropriated for highway purposes; have compiled a “road code” similar to that of the “school code,” simply embodying general principals of bridge construction, grades, material, etc., etc., and let local road supervisors, like school directors, work out their own details to the best advantage under local conditions.

Vest authority to expend all state money in the present county commissioners who are conversant with all the local roads conditions and material and who would be personally interested in getting full value for every dollar expended and be directly responsible to the people for the wise use of this money. Let the people elect a county surveyor competent to do all necessary road work who can be reached when needed without four days' delay as was the case in Millcreek township the past year.

In other words, let everyone interested in good roads help to get back the authority taken away from us and delegated to a highway department, with 4,000 employes, so ponderous and expensive that there is no money left to really build and repair roads. A perusal of the articles written by Senator H. A. Clark shows very clearly why there is so little money for actual road work. It is nearly all expended for salaries and traveling expenses.

Judge Walling in his address to the road supervisors said, “whatever the people of a community or state want they can have. If you want good roads and go after them in the right way you can have them.” Well we want them, but the present method seems like a terribly slow and expensive way to get them. Let every automobile owner and road user set his wits to work and find a quicker and more economical way.—R. S. McCreary, Erie Co., Pa.

TO GET BETTER ROADS WHERE YOU LIVE

I have read with great interest the articles on the above subject appearing in Pennsylvania Farmer. Any one of those articles alone is worth one year's subscription to every farmer or other person who is obliged to travel much on the country roads. The first consideration and real foundation of all good roads is drainage. While the King Drag is indespensable, it is only an adjunct and comes in about second in the essential construction of a permanent dirt road. I have experimented on short sections of road and explained the system I used in an article published in this paper May 24, 1913.

Every foot of dirt road should have a perfect drain under the centre of road three feet deep and wide enough to lay two rows of three-inch tile side by side. The tile ditch should have sloping sides to about six feet wide at the surface and filled with crushed or cobble stone, rounded up with the dirt that had been removed from the ditch. This should be rolled down to a perfectly smooth surface and kept in shape by use of the King drag. You then have the best and cheapest road on earth and one that will last for ages.

In the series of articles now running, the estimate per mile is $30 for first year, $12 for the second year and $5 each subsequent year for up-keep. My estimate for building such a road would be $100 per mile for first year, and about $25 for each subsequent year, to be dragged as often as needed to keep in perfect condition. Such a road with up-to-date concrete tile drain, divided into sections with a man to keep in repair the year round, would be of inestimable value and last for ages. Most townships are equipped with good road machines with which all the ditching can be done excepting a little grading in the ditch with pick and shovel. Every township should own a stone crusher that would enable it to use any and all kinds of stone, but many miles could be built with cobble stone which farmers would be glad to furnish at a low figure to get them out of their fields.

The country earth roads comprise a large percentage of our road system and will for years to come. With the adoption of the proper system of building, dragging and carefully patrolling each section all the year, we can furnish the public with roads at 90 percent less than macadam road and more satisfactory to drive on ten months in the year. I know of short sections of underdrained road that have been in use over 30 years and while not always rounded up properly, have remained solid and free from mud practically the year round. With the careful use of a drag and the application of a little gravel, you can have a far superior road at one-tenth the cost of any macadam road I have ever seen. They are short-lived and soon become uneven and wear full of holes which cannot be successfully repaired. A brick paved road is better but without perfect drainage a good durable road cannot be constructed of any material.—W. R. McGill, Crawford Co., Pa.

“BETTER ROADS WHERE YOU LIVE” DEMONSTRATED

I want to say just a few words in commendation of Dr. McCaskey's articles on road work in Pennsylvania Farmer. The articles and illustrations have to do with roads which I have traveled every day, with few exceptions, for almost four years. The conditions as pictured in the first illustration were prevalent previous to, and the first year after I was appointed a regular rural carrier on Route 6 from Lancaster, Pa. After that the Doctor's efforts began to bring forth fruit and the roads are pretty generally as pictured in the second illustration.

This is only one road. There was one that was even worse than the one shown in the illustration. In early spring my horse had to wade in mud to his knees, and it was almost impossible to drag my light mail wagon thru it. Here Dr. McCaskey succeeded in getting a man to work who was and is “on the job” with his drag just at the right time, and it is even better than the dragged road illustrated, being the prize road of the township. I travel thru another township where they use the drag too, with admirable success. This beat is particularly hilly, and taking up with a suggestion I made several years ago, they have cut out the hills appreciably and at the same itme have quarried enough stone to “fill in” low places, making the roads 100 percent better. They are at work now taking out one which will yield almost enough stone to build a mile of good macadam and get enough “spalls” or small stone to fill in low places all along the beat.

Such work pays. In too many instances supervisors and road masters are on the job for “what there is in it,” and not for the good they can do. One failing I find in particular is that when a scraper is used to clear out the ditches, when a rock is in the way, instead of having men following to dig it out, the shear of the scraper is simply lifted and on they go. The first heavy storm that comes along eliminates all the work done. This wastes money uselessly. Ditches must be clear thru their whole length, and must be looked after and cleared out after every rain. Another bad habit is to scrape the road up nicely, leaving the clods in the center without dragging or pulverizing them. Consequently farmers and others drive along the sides and in a short time the dirt is back in the ditches and the road is a flat as ever.

Another suggestion: If every road user, during freezing weather and thawing weather, drive the center of the road when soft, they would have two nice smooth places to drive on when the ground was frozen hard, instead of bumping over ruts which are thoughtlessly made by people driving promiscuously, hunting good driving when the roads are soft. This should be a rule to observe just as carefully as that of turning to the right to pass a team coming toward you. In conclusion, I wish to state that the supervisors who opposed Dr. McCaskey's progressive methods are all in the discard, the last one being defeated in last fall's election, and we have great hopes in the present board carrying the work along up-to-date lines until the roads in the township are all prize roads.—John H. Swant, Lancaster Co., Pa.

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McSPARRAN'S GRANGE NOTES

Special Banks For Farmers

The question for immediate consideration in Congress now is that of establishing agricultural banks. The supposition that it is necessary to have a particular kind of bank for farmers' use seems to have been taken as an undisputed fact, and Congress is apparently bending its thought to the proposition as to how this so-called essential form of bank is to be constructed.

Years ago, there was a cry raised for the government to loan money to the farmers at a small rate of interest. After a while that cry died and in these last years the nation is travailing for the uplift of the farmer. So far this travail has brought forth wind, but I fear that so determined are the labors that if the farmer continues to play the role of a passive onlooker, there will be brought forth a progeny of assinine proclivities and an absolute disinclination to work.

As a grange, we have for years been fighting to have the burden of “special interests” taken off the shoulders of the producers of this country. We have pointed out in our grange platforms that these special interests were largely the result of class legislation; and now we have the sop offered to us to take from the parent government some of these legislative benefits in the form of a special bank loaning money at a special rate of interest. There are two fundamental propositions that these “uplifters,” and congress as well, want to take knowledge of. The first is that the American farmer is not a peasant, and the second is that class legislation is class legislation if it favors the agricultural class as surely as if it favors the bankers or the manufacturers.

Men have gone to Europe and brought back their systems of dealing with the farmer, and have attempted to apply them here apparently forgetful of the fact that the farmer of Europe is a peasant. Note his condition for a moment. He is ground down by the iron heel of Fuedalism; browbeaten by the aristocracy of “the divine right of kings;” taxed to death by governments in the conduct of which he had practically no say; inured to his condition by centuries of ignorant and unremitting toil, until at last, steeped thru it all in the idea of parental government, he receives the meagre benefits doled out to him to prevent his extinction.

Not so the American farmer. Gleaned from the fields of Europe by the love of religious freedom, he established here, less than a century and a half ago, a government unequalled in known history. From the shores of the Atlantic, with axe and plow, he pushed back into the depths of an unknown continent. As the latent treasures of this new land were opened up, he developed here a miner, there a mechanic. Again with nervous haste he pushed westward, and his needs became more and more diversified. The railroad, the factory and the town sprung up with mushroom speed. But on he went, not even the broad fields of the prairies checking his westward march. The alkali prairies were passed and the mountain valleys were occupied, until at last, breaking thru the Sierras, he made his last grand charge into the fertile slopes of the Pacific Coast. Along with him he took the church and school.

'Tis true, that in his all-absorbing haste he did not give the careful attention to legislation that he should have given. The unscrupulous politician plundered his honest gain until today he is obliged to contend for the reclamation of his rights; but he is no peasant. In that monumental march of 3,000 miles across hostile and unbroken territory, he has maintained the highest ideals of government known to man, so that today if you want a concrete specimen of a splendid state government you go not to “Penns Woods” or the “Dutch Settlement” or “the Harbor of the Mayflower”—now the seat of manufacturing and the abode of hair-splitting judiciaries—but out to the farmer state of Oklahoma.

The farmer asks no special legislation and needs none. If he can not pay interest as any other business pays it, according to the risk, it is because there is something the matter with his business. And we farmers know there is something the matter. We have time and time again pointed out our difficulty concerning the tariff, concerning local taxation, concerning transportation and concerning public service in general. And in banking, also, we lack a square deal. The farmer has the best collateral in the world, and he should be given the best line of credit by the banks. That is simple business justice. An industrial business is promoted. They issue bonds. The bank takes those bonds and sells them and credits the business with the amount of bonds underwritten. But a young man buys a farm that has for 50 years produced splendid crops. He needs financial aid. He goes to the bank. They do not want his mortgage. They turn him down. He has the merchants and the railroads beaten a mile as a safe investment, and what is needed is that the banks should take these mortgages as security and issue bonds upon them, thus converting them into a liquid asset.

Under any strong system of currency, some supervision of the rates of interest charged should be provided, but that would refer to all classes of borrowers and not alone to the farmers. To sum the whole matter up, my belief is that our currency system needs at present four things in addition to what has been provided in the new currency law: First, guarantee of bank deposits. Second, regulation of interest rates to insure as far as possible uniformity and equality of opportunity. Third, the inauguration of a department in our present banking by which mortgages would be received by the bank at a rate of interest proportional to the hazard, just as is now done in the underwriting of other enterprises and the issuing of bonds by the bank against these mortgages which could be floated at a lower rate of interest and the difference would be profit for the bank. Fourth, giving to real estate as collateral a line of credit similar to that already granted to mercantile operations.

We farmers have a right to these things, together with all other classes of people who do business with banks. We do not ask for special privilege. We do demand a square deal.—John A. McSparran.

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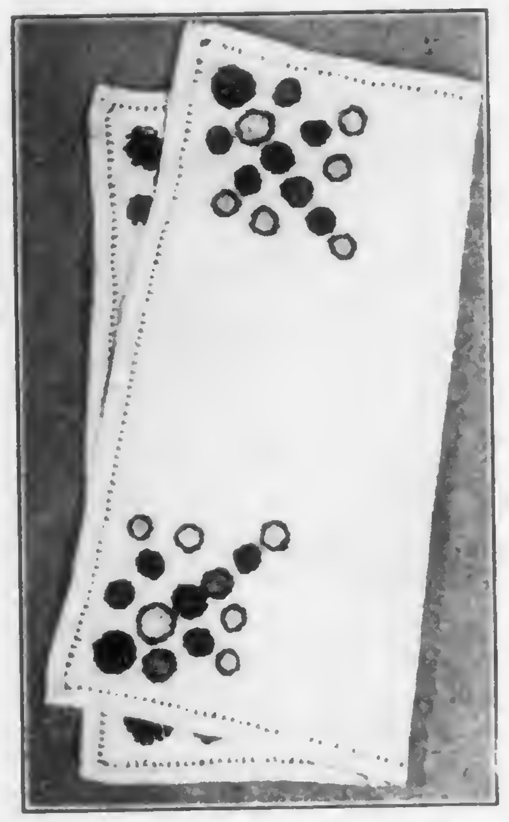
Household

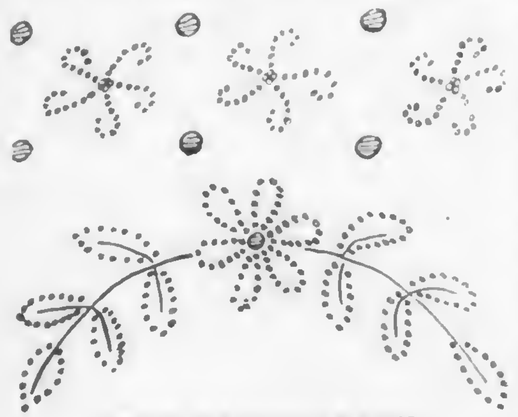
JEWEL AND BEAD EMBROIDERY

By Mae Y. Mahaffy.

Jewel work has long been a prominent feature in dress trimmings, and is utilized in combination with fancy stitches in various other forms of embroidery, but its usage now has become remarkable, owing largely to the popular craze for bead trimmings. The use of beads in embroidery designs almost invariably calls for some jewel work, and hence both forms are just now in the lead for trimmings. Since they are always splendid features, no matter what fad may be to the fore, it is well for every needleworker to understand just how to make the best of both beads and jewels in an ornamental way.



The jewel work is little more than a raised satin stitch. This solid work was found in many forms of embroidery, is, in fact, the foundation of most of the finest decorative needlework used today. The jewels may take the form of small vari-sized disks, as in the little doily shown, or that of ovals, hexagons, and other jewel-like shapes. Silk produces the best results, but now that so many attractive colors are obtainable in cotton floss it is quite possible to secure very good jewels by a discriminating selection of this cheaper material, altho the richness and brilliancy of the silk is certainly more appealing. The jewels may compose the entire design, or, as noted above, they may be intermingled with almost any other stitchwork to splendid advantage, whether on linen or some heavier fabric.



DESIGNS FOR SUITABLE BEADING.

A tray of gems in a jeweler's window will give one delightful ideas as to the possibilities in the color line. To be sure, it is not essential that a studied application of exactly copied colors should be aimed at; the same leniency is allowed in this field as in any of the other embroideries, but consideration of the real gems will suggest harmonious schemes of color which cannot fail to be appreciated. Sometimes the jewels are of such size that it is practicable to shade them a trifle, but as a rule they are best worked in one shade, the mingling of colors and tints being achieved by massing groups of the jewels, each in its own particular coloring. Then, too, pleasing results are often arrived at thru the use of the vari-colored or shaded floss altho this must be used with care, as any marked change from one shade to another while working a given jewel will produce startling results. Select about the same tone in all the different colors, daintier, more artistic effects thus being attained.

In the disks, work across in one direction in the satin stitch first to form the padding, and cross these stitches closely and smoothly for the outer embroidery. By beginning the outer work in the center and working out to the edges alternately it will be found very easy to preserve the contour of the circle, a very important item. In the ovals the padding may be placed lengthwise, with outer stitches straight across, or the padding may be slanted diagonally in one direction, and the outer layer of stitches be placed on exactly the opposite slant. This latter is perhaps the most effective method. The padding must always be made especially heavy near the center, so that the desired rounding figures will result. After the solid work is placed, fine outline stitches in black, rich brown, or in a shade darker than that of each jewel, are worked around each, the exact forms being carefully maintained

In doing bead embroidery fine needles and silk thread of the same shade as the material or of the beads will be needed. As to the background fabrics there seems to be no limit. Naturally, one would expect to see bead work on non-washable fabrics only, but washable gowns, waists, etc., are ornamented quite freely in the same fashion. However, silks, marquisettes, chiffons, voiles, challies, and similar materials will prove better adapted to the work. When washable goods are embellished in this way attention will need to be given the laundering process. No rubbing of the beads is allowable, and in ironing the article must be placed on a heavily padded surface, and as little weight placed upon them as is practicable to prevent breakage.

Two designs suitable for beading are shown, but almost any embroidery design may be beaded, particularly those for French knot or cross-stitch work. In the latter, each of the crosses is represented by a bead, while in the former the French knots are replaced by beads. As a rule, outlining or couching is combined with the bead work, and frequently some solid work. It is not wise to stamp the regular embroidery patterns on any material for bead work, as the beads will not cover all the stamped lines. The pattern may be basted underneath transparent fabrics and readily followed. On others use the design stamped on tissue paper basted over the material, working right thru both, and when the beading is completed tear the paper away.

The beads are sewn down to the goods with as short stitches as possible so that the thread will not show beyond the bead, the thread being carried along on the wrong side. The beads are placed quite close together when a small size is used, but larger ones may be spaced a bit. The centers of flowers are formed of groups of beads, of one larger bead or sequin, or of a jewel in satin stitch. They may be in many-hued, irridescent effects, or any color combination may be followed, if more than one color is desired.

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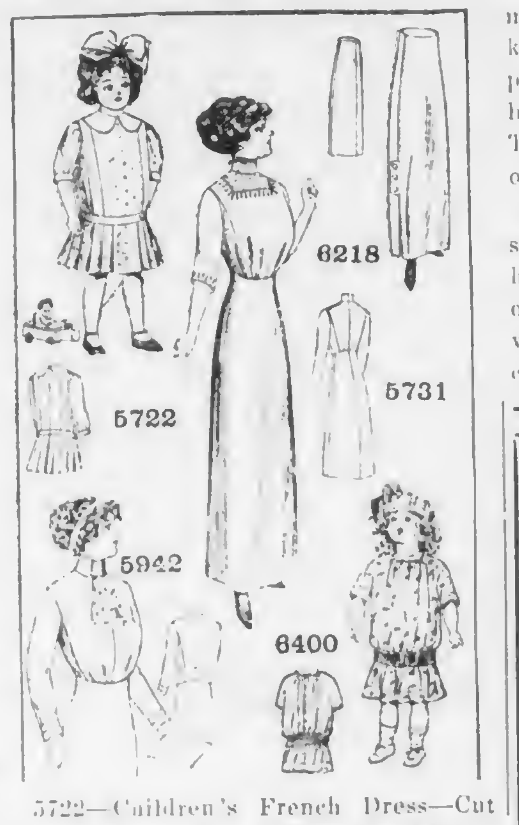

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Freshening Flowers.—To keep a bouquet fresh for a number of days, sprinkle lightly with fresh water, then put into a vessel containing soap suds. Take the bouquet out of the suds every morning and lay it sideways the stalks first into the water. Keep it there a minute and then take it out and sprinkle the flowers lightly with water. Replace it in the soapsuds and it will bloom as fresh as when first gathered. The soapsuds needs changing every other day.

A Raspberry Dessert.—Cut a small sweet cantaloupe in half—serve one half filled with vanilla ice cream, the other with red raspberries sprinkled with sugar. This makes a fitting last course to a good dinner or luncheon.

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SYNOPSIS OF PREVIOUS CHAPTERS.

Farmer Winston, having failed as a homesteader, desperate, accepts a proposal to simulate Lance Courthorne, an adventurer. Courthorne and his pals are thus able to carry thru some smuggling operations. In the clash with the police, Courthorne kills Trooper Shannon, leaving evidence pointing to Winston as the murderer. The scene shifts to Silverdale, founded by Colonel Barrington. The Colonel is worried over wheat operations and the coming advent of Lance Courthorne, cousin to Maud Barrington, niece and ward of Colonel Barrington, to claim his share of his father's estate. Maud Barrington is told of Courthorne's past misdeeds. Winston, meanwhile, has pushed on to Montana, being held and later released, for lack of evidence, by a government officer, who discloses the belief on the part of the police, that Winston is the murderer of Trooper Shannon. A letter for Courthorne is opened by Winston. Complying with instructions therein, he meets and confers with a lawyer respecting Courthorne's inherited acres at Silverdale, and following out his role as simulator of Courthorne, goes to Silverdale and is there received as graciously as could be expected. Some of his actions fail to tally with Courthorne's reputation. He wins the good will of Dane, one of the Colonel's advisers. The real Courthorne, who was supposed to have been drowned during the smuggling adventure, now reappears in Montana, inadvertently learns of his inheritance, and pieces together conclusive evidence that Winston has gone to Silverdale. Courthorne and Ailly Blake, whose life he has blighted, agree to ignore each other's identity. Winston and Maud Barrington, caught by a blizzard while driving to Silverdale, find shelter in a deserted shed over night, where he acts the part of a considerate gentleman. Maud Barrington promises Winston to sow her land in wheat the following spring. Under criticism from the Colonel, Winston begins planting operations. He is commended by Maud Barrington for successful efforts to break the gambling habits of Ferris, a young Englishman, a task undertaken at her request. Courthorne now appears and Winston contracts to advance him money, provided he absents himself immediately. During a fire which threatens the wheat fields Winston is injured. Suspicions point to Ferris as the incendiary. Questioned, he admits his guilt, and is dispatched from the settlement. Winston soon recuperates. Wheat having gone down in the quotations, he prepares to go to Winnipeg on business.

CHAPTER XVIII (concluded)

Winston was grateful to her, and still more to Miss Barrington, who came in just then, while he did not see the girl again before he departed with Alfreton on the morrow. When they had left Silverdale a league behind, the trail dipped steeply amid straggling birches to a bridge which spanned the creek in a hollow, and Winston glanced up at the winding ascent thoughtfully.

"It has struck me that going round by this place puts another six miles on to your journey to the railroad, and a double team could not pull a big load up," he said.

The lad nodded. "The creek is a condemned nuisance. We have either to load light when we are hauling grain in, and then pitch half the bags off at the bottom and come back for them—while you know one man can't put up many four-bushel bags—or keep a man and horses at the ravine until we're thru."

Winston laughed. "Now, I wonder whether you ever figured how much those little things put up the price of your wheat."

"This is the only practicable way down," said the lad. "You could scarcely climb up one side where the ravine's narrow abreast of Silverdale."

"Drive round. I want to see it," said Winston. "Call at Rushforth's for a spool of binder twine."

Half an hour later Alfreton pulled the wagon up amid the birches on the edge of the ravine, which just there sloped steep as a railway cutting, and not very much broader, to the creek. Winston gazed at it, and then handed the twine to the hired man.

"Take that with you, Charley, and get down," he said. "If you strip your boots off you can wade thru the creek."

"I don't know that I want to," said the man.

"Well," said Winston, "it would please me if you did, as well as cool your feet. Then you could climb up, and hold that twine down on the other side."

The man grinned, and, tho Alfreton remembered that he was not usually so tractable with him, proceeded to do Winston's bidding. When he came back there was a twinkle of comprehension in his eyes, and Winston, who cut off the length of twine, smiled at Alfreton.

"It is," he said dryly, "only a little idea of mine."

They drove on, and reaching Winnipeg next day, went straight to Graham, the wheat-broker's offices. He kept them waiting some time, and in the meanwhile men with intent faces passed hastily in and out thru the outer office. Some of them had telegrams or bundles of papers in their hands, and the eyes of all were eager. The corridor rang with footsteps, the murmur of voices seemed to vibrate thru the great building, while it seemed to Alfreton there was a suggestion of strain and expectancy in all he heard and saw. Winston, however, sat gravely still, tho the lad noticed that his eyes were keener than usual, for the muffled roar of the city, patter of messengers' feet, ceaseless tinkle of telephone call bells, and whir of the elevators, each packed with human freight, all stirred him. Hitherto he had grappled with nature, but now he was to test his judgment against the keenest wits of the cities, and stand or fall by it, in the struggle that was to be waged over the older nations' food.

At last, however, a clerk signed to them from a doorway, and they found Graham sitting before a littered table. A man sat opposite him with the telephone receiver in his hand.

"Sorry to keep you, but I've both hands full just now. Every man in this city is thinking wheat," he said. "Has he word from Chicago, Thomson?"

"Yes," said the clerk. "Bears lost hold this morning. General buying."

Just then the door swung open and a breathless man came in. "Guess I scured that clerk of yours who wanted to turn me off," he said. "Heard what Chicago's doing? Well, you've got to buy for me now. They're going to send her right up into the sky, and it's about time I got out before the bulls trample the life out of me."

"Quite sure you can't wait until tomorrow?" asked Graham.

The man shook his head. "No sir. When I've been selling all along the line! Send off right away, and tell your man on the market to cover every blame sale for me."

Graham signed to the clerk, and as the telephone bell tinkled a lad brought in a message. The broker opened it. "New York lost advance and recovered it twice in the first hour," he read. "At present 1 point or two better. Steady buying in Liverpool."

"That," said the other man, "is quite enough for me. Let me have the contracts as soon as they're ready."

He went out, and Graham turned to Winston. "There's half-a-dozen more of them outside," he said. "Do you buy or sell?"

Winston laughed. "I want to know what a wise man would do."

"Well," said Graham, "I can't tell you. The bulls rushed wheat up as I wired you, but the other folks got their claws in and worried it down again. Wheat's anywhere and nowhere all the time, and I'm advising nobody just now. No doubt you've formed your own opinion."

Winston nodded. "It's the last of the grapple, and the bears aren't quite beaten yet, but any time the next week or two the decisive turn will come. Then, if they haven't got out, there'll be very little left of them."

"You seem tolerably sure of the thing. Got plenty of confidence in the bulls?"

Winston smiled. "I fancy I know how Western wheat was sown this year better than any statistician of the ring, and it's not the bulls I'm counting on, but those millions of hungry folks in the old country. It's not New York or Chicago, but Liverpool the spark is coming from."

"Well," said Graham, "that's my notion, too, but I've no time for anybody who hasn't grist for me just now. Still, I'd be glad to come round and take you home to supper if you haven't the prejudice, which is not unknown at Silverdale, against eating with a man who makes his dollars on the market and didn't get them given to him."

Winston laughed, and held up a lean brown hand. "All I ever had until less than a year ago, I earned with that. I'll be ready for you."

He went out with Alfreton, and noticed the lad ate little at lunch. When the meal was over, he glanced at him with a smile through the cigar smoke.

"I think it would do you good to take me into your confidence," he said.

"Well," said Alfreton, "it would be a relief to talk and I feel I could trust you. Still, it's only fair to tell you I didn't at the beginning. I was an opinionated ass, you see."

Winston laughed. "I don't mind in the least, and we have most of us felt that way."

"Well," said the lad, "I was a little short of funds, and proud of myself, and when everybody seemed certain that wheat was going down forever, I thought I saw my chance of making a little. Now I've more wheat than I care to think of to deliver, the market's against me. If it stiffens any further, it will break me; and that's not all, you see. Things have gone tolerably badly with the folks at home, and I fancy it took a good deal of what should have been the girls' portion to start me at Silverdale."

"Then," said Winston, "it's no use trying to show you how foolish you've been. That is the usual thing, and it's easy; but what the man in the hole wants to know is the means of getting out again."

Alfreton smiled ruefully. "I'm tolerably far in. I could just cover at today's prices if I pledged my crop, but it would leave me nothing to go on with, and the next advance would swamp the farm."

"Well," said Winston quietly, "don't buy to-day. There's going to be an advance that will take folk's breath away but the time's not quite ripe yet. You'll see prices knocked back a little the next day or two, and then you will cover your sales to the last bushel."

"But are you sure?" asked the lad, a trifle hoarse. "You see, if you're mistaken, it will mean ruin to me."

Winston laid his hand on his shoulder. "If I am wrong, I'll make good your losses."

Nothing more was said on that subject, but Alfreton's face grew anxious once more as they went up and down the city. Everybody was talking wheat, which was not astonishing, for that city, and the two great provinces to the west of it, lived by the trade in grain, and before the afternoon had passed they learned that there had been a persistent advance. The lad's uneasiness showed itself, but when they went back to the hotel about the supper hour Winston smiled at him.

"You're feeling sick?" he said. "Still, I don't fancy you need worry."

Then Graham appeared and claimed him, and it was next morning when he saw Alfreton again. He was breakfasting with Colonel Barrington and Dane, and Winston noticed that the older man did not appear to have much appetite. When the meal was finished he drew him aside.

"You have covered your sales, sir?" he said.

"No sir," said Barrington. "I have not."

"Then I wonder whether it would be presumption if I asked you a question?"

Barrington looked at him steadily. "To be frank, I fancy it would be better if you did not. I have, of course, only my own folly to blame for believing I could equal your natural aptitude for this risky amusement which I had, and still have, objections to. I was, however, in need of money, and seeing your success, yielded to the temptation. I am not laying any of the responsibility on you, out am not inclined to listen to more of your suggestions."

Winston met his gaze without embarrassment. "I am sorry you have been unfortunate, sir."

Just then Dane joined them. "I sat up late last night in the hope of seeing you," he said. "Now, I don't know what to make of the market, but there were one or two fellows who would have bought my estimated crop from me at a figure which would have about covered working expenses. Some of the others who did not know you were coming in, put their affairs in my hands too."

"Sell nothing," said Winston quietly.

It was an hour later when a messenger from Graham found them in the smoking room, and Colonel Barrington smiled dryly as he tore up the envelope handed him.

"'Market opened with sellers prevailing. Chicago flat!'" he read.

Dane glanced at Winston somewhat ruefully, but the latter's eyes were fixed on Colonel Barrington.

"If I had anything to cover I should still wait," he said.

"That," said Dane, "is not exactly good news to me."

"Our turn will come," said Winston gravely.

That day, and during several which followed it, wheat moved down, and Dane said nothing to Winston about what he felt, tho his face grew grimmer as the time went on. Barrington was quietly impassive when they met him, while Alfreton, who saw a way out of his difficulties, was hard to restrain. Winston afterwards remembered that horrible suspense, but he showed no sign of what he was enduring then, and was only a trifle quieter than usual when he and Alfreton entered Graham's office one morning. It was busier than ever, while the men who hastened in and out seemed to reveal by attitude and voice that they felt something was going to happen.

"In sellers' favor!" said the broker. "Everybody with a few dollars is hammering prices one way or the other. Nothing but wheat to be heard of in this city. Well, we'll simmer down when the turn comes, and tho I'm piling up dollars, I'll be thankful. Hallo, Thomson, anything going on now?"

"Chicago buying," said the clerk. "Now it's Liverpool! Sellers holding off. Wanting a two-eighths more the cental."

The telephone bell tinkled again, and there was a trace of excitement in the face of the man who answered it. "Walthew has got news ahead of us," he said. "Chicago bears caved in. Buying orders from Liverpool broke them. Got it there strong."

Winston tapped Alfreton's shoulder. "Now is the time. Tell him to buy," he said. "We'll wait outside until you've put this deal thru, Graham."

It was twenty minutes before Graham came out to them. "I'll let you have your contracts, Mr. Alfreton, and my man on the market just fixed them 'n time,' he said. "They're up a penny on the cental in Liverpool now, and nobody will sell, while here in Winnipeg they're falling over each other to buy. Never had such a circus since the trade began."

Alfreton, who seemed to quiver, turned to his companion, and then forgot what he had to tell him. Winston had straightened himself, and his eyes were shining, while the lad was puzzled by his face. Still, save for the little tremor in it his voice was very quiet.

"It has come at last," he said. "Two farms would not have covered your losses, Alfreton, if you had waited until tomorrow. Have supper with us, Graham—if you like it, lakes of champagne."

"I want my head, but I'll come," said Graham, with a curious smile. "I don't know that it wouldn't pay me to hire yours just now."

Then Winston turned suddenly, and running down the stairway shook the man awaiting him by the arm.

"The flood's with us now," he said. "Find Colonel Barrington, and make him cover everything before he's ruined. Dane, you and I, and a few others, will see the dollars rolling into Silverdale."

Dane found Barrington, who listened with a grim smile to what he had to tell him.

"The words are yours, Dane, but that is all," he said. "Wheat will go down again, and I do not know that I am grateful to Courthorne."

Dane dare urge nothing further, and spent the rest of the day wandering up and down the city, in a state of blissful content, with Alfreton and Winston. One of them had turned his losses into a small profit, and the other two, who had, hoping almost against hope, sown when others had feared to plow, saw that the harvest would repay them beyond their wildest expectations. They heard nothing but predictions of higher prices everywhere, and the busy city seemed to throb with exultation. The turn had come, and there was hope for the vast wheat lands it throve upon.

Graham had much to tell them when they sat down to the somewhat elaborate meal Winston termed supper that night, and he nodded approvingly when Dane held out his glass of champagne and touched his comrade's.

"I'm not fond of speeches, Courthorne, and I fancy our tastes are the same," he said. "Still, I can't let this great night pass without greeting you as the man who has saved not a few of us at Silverdale. We were in a very tight place before you came, and we are with you when you want us from this time, soul and body and all our possessions."

Alfreton's eyes glistened, and his hand shook a little as he touched the rim of Winston's goblet.

"There are folks in tho old country who will bless you when they know," he said. "You'll forget it, tho I can't that I was once against you."

Winston nodded to them gravely, and, when the glasses were empty, shook hands with the three.

"We have put up a good fight, and I think we shall win, but, while you will understand me better by and by, what you have offered me almost hurts," he said.

"What we have given is yours. We don't take it back," said Dane.

Winston smiled, tho there was a wistfulness in his eyes as he saw the bewilderment in his companions' faces.

"Well," he said slowly, "you can do a little for me now. Colonel Barrington was right when he set his face against speculation, and it was only because I saw dollars were badly needed at Silverdale, and the one means of getting them, I made my deal. Still, if we are to succeed as farmers we must market our wheat as cheaply as our rivals, and we want a new bridge on the level. Now, I got a drawing of one, and estimates for British Columbia stringers, yesterday, while the birches in the ravine will give us what else we want. I'll build the bridge myself, but it will cheapen the wheat-hauling to everybody, and you might like to help me."

Dane glanced at the drawing laid before him, but Alfreton spoke first. "One hundred dollars. I'm only a small man, but I wish it was five," he said.

"I'll make it that much, and see the others do their share," said Dane, and then glanced at the broker with a curious smile.

"How does he do it—this and other things? He was never a business man!"

Graham nodded. "He can't help it. It was born in him. You and I can figure and plan, but Courthorne is different—the right thing comes to him. I knew the first night I saw him, you had got the man you wanted at Silverdale."

Then Winston stood up wineglass in hand. "I am obliged to you, but I fancy this has gone far enough," he said. "There is one man who has done more for you than I could ever do. Prosperity is a good thing, but you, at least know what he has aimed at stands high above that. May you have the Head of the Silverdale community long with you!"

(To be continued)

Visiting the Sick.—Neighbors, use judgment in visiting the very sick. Make known to the family you want to help when they need you. A short call at the home is always appreciated, but the chronic visitors should be told to go home. It is a grand charity to help in times of sickness. The good neighbor is one who takes home the family washing in the back of the buggy, and the twins in the front. There are some who know how to help. God bless 'em!

Nut and Honey Sandwiches.—Blanch and chop four tablespoonfuls of almonds or walnuts, and mix them to a paste with honey, spread this on buttered slices of bread, and cut into finger shaped pieces.

Curried Nut Sandwiches.—Fry one teaspoonful of curry powder in one tablespoonful of butter for five minutes, then add three tablespoonfuls of chopped nut meats, toss over the fire till well browned, then add a squeeze of lemon juice, and stir till it is a nice paste, spread on thin buttered and sliced bread, and make into neat sandwiches.

Dressing Wounds.—The Ohio Experiment Station at Wooster, O., has issued circular 126 describing the proper dressing of tree wounds after pruning. The following dressings are discussed at length: Gas tar and pitch, solid asphaltum, liquid asphaltum and linseed oil fluid asphaltum.

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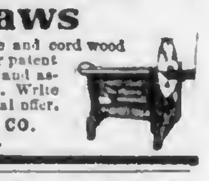

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 12, 1914.

Good solid-packed creamery butter commanded weak prices. Demand for desirable egg stock was fair and such stock was well cleaned up. Poultry offerings were absorbed by the demand, but prices showed little change. Fruits and vegetables sold slowly and showed little change in prices.

Butter.—Western creamery, 38c; extras, 36c; firsts to seconds, 25@31c; special prints, 44@47c; near-by prints, 42@45c.

Eggs.—Candled, 37@39c doz; extras, 34c. Current receipts at $9.45 per standard case. Near-by firsts, $9.60 standard case.

Poultry.—Fowls, 16@17c; young chickens, 15@17c; old roosters, 12@13c; turkeys, 17@19c; ducks, 16@17c; geese, 15@17c; pigeons, 22@25c pair.

Dressed Poultry.—Western fowls, 14@18c; roosters, 13c; turkeys, 18@25c; roasting, chickens, 17@19c; ducks, 18@19c; 14@18c; squabs, $2.00@4.85 doz.

Vegetables.—White Potatoes, Pa., 75@90c bu. Onions, $1.00@2.00 per 100-lb bag. Lettuce $1.00@2.00 bas. Sweet Potatoes, 50@55c bas.; Squash, $1.25@1.50 crate. Celery 30@60c bch. Cabbage, $1.75@2 bbl; Cauliflower $1.25@2.25 hamp. Mushrooms 50c@$1.50 per 4 lb bas.

Fruits.—Apples, choice, $3.00@5.50 bbl. Cranberries, $2.00@2.75 crate. Lemons $2.50@3.50 box. Grapefruit $2.00@3.50 box. Oranges, $1.75@3.50 box. Pears, 50@75c bas. Pineapples, $3.00@4.00 crate. Grapes, white, $4.00@$6.00 keg.

Hay and Grain.—No 3, large bales, $18.50@19.00. No. 1 medium bales, $18.00@18.50; No. 2 medium $17.00@17.50; no grade $10.00@13.00. Clover mixed hay, light mixed at $17.00@17.50. Straw. No. 1, straight rye, $16.00@16.50; No. 2 do., $15.00@15.50; No. 1 tangled rye straw $11.50@12.00; No. 2 do., $10.50@11.00, No. 1 wheat straw, $9@9.50; No. 1 oat straw, $10@10.50; new shelled corn No. 2 yellow, kiln dried, 70@71c; Natural No. 2 yellow, 68½@69½c; Wheat No. 2 red 93½@94c; No. 1 Northern, 87½@88c; No. 2 white oats, 45@45½c. No. 3 white, 44@44½c. Standard white, 44½@45c.

Coffee.—Rio 7s 9⅜c; Santos 4s 12⅛c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.05 cwt.; cubes, $4.35; powdered, $4.15; granulated, $4.05; standard granulated, $4.10; crystal A, $4.05.

Flour.—For 196 lbs. in wood, winter-clear, $3.75@4.00; do. straight, $4.25@4.50; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.00 per bbl.

Hides and skins.—Steers, abattoir, 17c; do. country, 15c. Cows, 16@16½c; do country, 14½c. Bulls abattoir, 14½c; do country, 13c. Calf skins, Nos. 5 to 12 and up, $1.45@2.70; do green, 14@15c.

Provisions.—City beef, in sets, smoked and air-dried, 33@33½c. Beef hams, $40@$42. Pork, family, $23@24.00. Hams, cured, 14@15c; skinned, 13½@14¼c; smoked, 16@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 9⅜@9½c; do. smoked, 11½@12c. Bellies in pickle, 14¾@15⅛c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11½@11⅞c tcs; do in tubs, 11½@12c; do kettle rendered, 11⅛@12c. Tallow, prime city, 7c; country, 7c; do dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 15c ¼-pk. Peppers, 2 for 5c. Eggplants 15@25c apiece. Cabbage, 5@10c head. Lettuce, 10c head. Beets 10c bch. Sweet potatoes, 15 ¼-pk. White potatoes, 25c ½-pk. String beans, 15c qt. Tomatoes, hothouse, 40c lb. Cucumbers, 5@15c apiece. Celery 25c bunch Squash, 5@10c. Cauliflower, 15@25c head.

Fruits.—Pears, dessert 75c doz. Grapes, 25c lb. Apples, 20@25c ¼-pk. Pineapples, 15@25c apiece.

BALTIMORE PRODUCE.

Baltimore, Md., Jan. 12, 1914.

In the Baltimore wholesale markets butter, eggs and poultry were steady.

Butter.—Creamery, fancy, 37@38c; do. choice 32@36c; prints 37@39c; blocks 36@38c; Maryland and Penna. rolls, 20@21c. Process, 25@26c.

Eggs.—Near-by firsts, 30c; western, 30c; southern, 28.

Live poultry.—Hens, 15c; chickens, 15c; old roosters, 10c; ducks, 16c.

Dressed Poultry.—Turkeys, 22c; Chickens, 17c; old roosters, 10@11c; ducks, 15@17c.

Vegetables.—Potatoes, Maryland and Penna. 80@85c bu; Beets, 3@4c bch. Beans, green $2.50@3.00 per bas; Celery, $2.00@3.00 crate. Cucumbers, $2.00@2.50 crate. Lettuce 75c@$1 bas. Tomatoes, $2.25@2.75 crate; Onions, 90c@$1 bu. Eggplant 4@4.50 crate; Spinach 30@35c box; Squash $1@1.50 crate. Cauliflower, $2@2.50 bas. Cabbage $30@32 ton.

Fruits.—Apples, $4.25@5.00 bbl. Cranberries, $2.75@3.25 box. Grapefruit $1.50@3.25 box.

Mill Feed.—Spring bran $25.50@26. Middlings, flour to white, $26.00@26.50; western middlings, $26@26.50; city mills, mid., $26.50@27.00.

Grain.—Wheat, No. 2, red western, 96¾c; Spot, 96⅜c; corn yellow shelled 69@69½c. Oats tsandard white, 44@44½c; No. 3 white 43½@44c. Rye, 60@73c.

Hay and Straw.—No. 1 timothy, $18.50 No. 2 timothy $17.50; do. No. 3 $15.00@16.00. No. 1 clover, $16.50@17.00 No. 2 do., $13@15; No. 1. tangled rye straw, $11.50@12.00; No. 1 oat straw, $10@10.50; No. 1 wheat straw, $8.50.

WILMINGTON PRODUCE.

Wilmington, Del., Jan. 12, 1914

Butter.—Print butter, 38@45c lb. Creamery rol', 35@45c.

Poultry.—Chickens, dressed, 18@25c; ducks, 18@20c.

Eggs.—38@45c doz.

Vegetables.—Potatoes 10@12c ¼-pk. Cabbage, new, 4c up. Sweet potatoes, 45@50c bas. Onions, 10@15c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets, 5@8c bch. Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼-pk. Pineapples, 20@25c apiece. Grapes, 20@25c bas. Oranges, California, 25@30c doz; Florida, 35@50c doz. Bananas 10@15c doz. Pears, 15c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼ pk. Grape fruit, 7@10c each.

YORK PRODUCE MARKET.

York, Pa., Jan. 12, 1914.

Trading at the various markets of the city was lighter than usual. There were the usual supplies on the stalls but the demand was exceptionally light.

Eggs.—32@35c.

Butter.—Country, 33@35c; separator, 36@38c. Milk, 6c per quart. Cream, 12c pint.

Poultry.—Hens 15c lb; springers, 15c lb. Dressed poultry, 40@75c each.

Vegetables.—Potatoes, 7@12c ½-pk; 40@90c bu; cabbage, 3@9c each; lettuce, 3@5c; beets, 5c bch; radishes, 5c bch; onions, 3@5c bch. 15c per ½-pk; lima beans, 12@14c qt; sweet potatoes, 10@15c per ½-pk; lard 14@15c lb; celery, 5@12c; peppers, 8@12c doz; eggplants, 3@8c each; rhubarb, 5c bch; turnips, 6@10c per ½-pk. soup beans, 10@12c qt; sauer kraut, 5@8c qt; apple butter, 18@22c qt.

Fruit.—Apples, 10@30c ½-pk; pears, 10@25c per ½-pk; chestnuts, 10@20c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.02 bu; corn, 90c; oats, 55c; rye, 77c; bran, $1.35 cwt.; middlings, $1.55 cwt.

Wholesale Grain Market — Wheat, 92c; corn, 70c; oats, 46c; rye, 67c.

PHILADELPHIA LIVE STOCK.

Philadelphia, Pa., Jan. 12, 1914.

Beef Cattle.—There was an improved feeling prevailing, with more noticeable activity in the general market, values showing an upward trend. Current arrivals included Illinois and Ohio brands of stock in moderate but sufficient numbers. Cows were steady as were also the desirable offerings in calves.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,698	7,432	5,289
Previous week	2,718	8,982	4,577

Best steers	$8.65@8.80
Choice steers	8.50@8.60
Good	8.30@8.40
Medium steers	7.50@7.65
Common steers	7.50@7.65
Bulls	5.25@6.70
Fat Cows	6.20@6.75
Medium cows	4.75@5.75
Thin cows	2.75@4.00
Milk cows	45.00@80.00

Veal calves steady.

Best calves	$11.50@12.00
Good to choice do.	10.50@11.00
Medium	7.50@8.00
Common do.	6.50@7.00
Culls	5.00@8.00

Sheep and Lambs.—There was a good disposal of the local holdings at well-maintained rates, the market closing in satisfactory shape.

Choice wethers	$5.50@5.75
Good do.	4.75@5.00
Common to medium	3.00@4.00
Ewes, fat	5.00@5.25
Extra lambs	8.50@8.75
Good to choice do.	8.00@8.50
Common to medium	5.50@7.75

Hogs.—Values were well sustained at the current range, with demand fairly seasonable. Western, as to size and quality are quoted at $11.50@11.75.

City Dressed Stock.—Every variety of choice and prime meats closed steady at quotations; trade being about normal. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@10c; extra wethers, 10½c. Spring lambs, 13@14c. Extras, 16c. Hogs, 11¾@12c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Jan 12, 1914.

Cattle.—With a supply of 115 loads, which was about one fourth larger than a week ago, the market ruled strong to a shade higher on the low-priced grades, while the medium to good cattle with weight were only about steady. Heifers in fair supply and sold steady to strong. Cows in liberal supply, but market ruled steady on all grades. Bulls in only fair supply and sold steady to strong. Best fresh cows steady; other grades and springers slow. Today's supply was 125 loads. With a moderate demand, the market ruled steady on best grades, but a shade lower on others.

Good to choice	$8.65@8.90
Good 1,300-1,400 lb.	8.30@8.60
Medium to good 1,200-1,300 lb.	8.15@8.35
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb	7.50@7.85
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.00@6.50
Heifers	5.50@7.75
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves.—Veal calves in fair supply all week, and with good demand market closed 50c cwt. above Monday's prices. Today's receipts were 400 head. Demand was good and market was active at lsendy prices.

Heavy and thin calves	$5.50@7.50
Veal calves	9.00@12.50

Sheep and aLmbs.—Sheep and lambs have been in fair supply all week, the bulk of the offerings being lambs. The demand for sheep has been good. Market closed 10c above Monday's prices, while the demand for lambs has been light and they declined 10c per cwt. from Monday's prices. Today's receipts were 10 double-deck loads. With a good demand for sheep the market was active and 10@15c higher on best geades, and strong on others. Lambs slow and steady.

Prime wethers	$5.80@6.00
Good mixed	5.25@5.50
Fair mixed ewes and wethers	4.25@5.00
Culls to common	3.00@4.00
Spring lambs	5.50@8.25

Hogs.—The supply all week has been liberal and the heavy hogs for the week closed 20 cents per cwt. lower while the Yorker and medium grades closed 15c per cwt. lower. Today's receipts were 105 double-decked loads. The market ruled steady.

Prime heavy	$8.40@
Prime medium weights	8.50@
Heavy mixed	8.45@
Best heavy Yorkers	8.50@
Light Yorkers	8.50@
Pigs, as to quality	7.40@7.80
Common to good roughs	6.75@7.25
Stags	

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 12, 1914.

Cattle.—The light receipts Monday and good demand gave a higher basis of values on choice butcher stuff that was well maintained thruout the week. On the close good cattle sold strong and the supply moderate. On this morning's market, 150 cars were sold. The market was steady on all grades.

Choice heavy steers	$8.75@9.00
Medium	8.00@8.50
Yearlings	7.50@8.00
Handy butchers	8.00@8.35
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.00@7.75
Butcher bulls	6.50@7.25
Feeders	6.00@7.00
Stockers	4.50@6.50
Cows and springers	30.00@90.00

Calves.—The moderate supply for the past week has raised the basis about a dollar per cwt. On the close the supply was large and the trade slow on the basis of $11.75@13 for good to extra. With 850 head on sale this morning, prices broke, choice selling at $11.50@12.

Choice veals	$11.50@12.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The active demand and higher basis on the opening was reflected on the business of the week. The opening basis was $8.50@8.65 on lambs and $6.75@7.50 on yearlings. On the close the supply was liberal and the trade on lambs slow and lower. Culls and heavy sold dull and draggy. Sheep were in better demand and sold active and higher. Eighty cars were sold on a steady market today.

Choice lambs	$8.25@8.40
Poorer grades	6.50@7.00
Yearlings	6.50@6.75
Wethers	6.00@6.25
Ewes	5.50@5.75
Sheep	5.75@6.00

Hogs.—The offerings on Monday were liberal, but with the good demand the market was strong on the basis of $8.65@8.70 for Yorkers. On the close the offerings were liberal and the trade active on the basis of $8.65 for the run. Dairy and common hogs sold fairly good with prices lower. A run of 150 cars today caused even lower prices this morning.

Heavies	$8.40@8.50
Mixed and medium	8.40@8.50
Yorkers	8.40@8.50
Light Yorkers	8.40@8.50
Pigs	8.25@8.40
Roughs	7.50@7.65
Stags	5.50@6.50

Horses.—Some 275 head were sold this morning. The general demand was fair at steady prices.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., Jan. 12, 1914.

Hay.—Receipts of No. 1 timothy and No. 1 light clover mixed are exceptionally small for this season of the year. Demand for these grades is strong and prices are looking higher. Off grades are dull and slow sale, also threshed and clover.

No. 1 timothy	$17.50@	18.00
No. 2 timothy	15.50@	16.50
No. 3 timothy	13.00@	14.00
No. 1 light mixed	15.50@	16.00
No. 1 clover mixed	14.50@	15.00
No. 2 clover mixed	13.00@	14.00
No. 1 clover	14.50@	15.00
No. 2 clover	10.00@	13.00

Straw.—Straw arriving freely and fully up to demand. Market a little dull.

No. 1 oat	$8.75@	9.00
No. 2 oat	8.00@	8.25
No. 1 wheat	8.25@	8.50
No. 2 wheat	7.75@	8.25
No. 1 rye	9.00@	9.50
No. 2 rye	8.00@	8.50

Ear Corn.—Receipts light, with strong demand for good, sound stock. Market steady.

New No. 2 yellow	67@68c.
New No. 3 yellow	65@66c.

Shelled Corn.—Trading very active since first of year. Receipts light and demand good.

New No. 2 yellow	71 @71½c.
New yellow No. 3, natural	69 @70c.
New Sample	63½@65c.

Oats.—Demand for oats a little slow; receipts more than ample.

No. 2 white	42½@43¾
Standard oats	42¾@43
Standard No. 3 oats	41¾@42¼

Mill Feed.—Exceptionally dull for this season of the year.

No. 2 white midds, 100's	$28.00@	$28.50
No. 1 brown midds, 100's	26.00@	26.50
W. W. Bran, coarse, 100's	25.50@	26.00
W. W. Bran, medium, 100's	24.50@	25.00

TOBACCO MARKET

There is not much animation in the situation. The outlook, however, is generally optimistic. Tobacco in the hands of local dealers consists of some 25,000 cases of 1909 crop and a comparatively small part of the 1913 crop. The cigar business is in a prosperous condition, save threats of strikes by cigar-makers, and the outlook would indicate a steady demand for leaf tobacco. As yet, however, none of the large concerns have entered the market for the crop of the present year. We reported that a few hundred acres have been sold to packers at $8 to $10 per cwt. for wrappers and $12 for fillers. Meanwhile farmers are busy stripping the favorable casing weather facilitating this operation.

The general tobacco market was unchanged according to advice from the New York exchange. There was a good demand for old Spanish. In Wisconsin much of the new crop has been sold and delivered, and buyers are in the field seeking the remainder. The cheaper grades are now selling as high as $10 per cwt. The situation is one of great interest and activity. In the New England section there is an evident shortage of wrappers as well as binders. The 1913 crop was sold at very satisfactory prices and growers will endeavor to increase their production the present year. The New York Crop is gradually being sold at prices about the same as during the previous weeks. In Ohio the growers organization reported total sales of $100,000, during the year and reorganized for a continuation of business in 1914. Many crops there have been sold at about $8 per cwt. for seed leaf and $10 to $12 or Spanish. A larger crop will be planted if conditions permit.

The importance of the insurance of tobacco sheds was emphasized by a serious loss by fire on a farm near Marietta. A worthless vagrant was refused the privilege of sleeping in shed only to return during the night and set fire to it with the usual disastrous results. In addition to shed and a large tobacco crop two wagons and many other farm implements were lost. We note in this connection the dangerous custom of carrying friction matches from which so many fires originate. If matches must be carried they should be of the safety type and even then their composition is dangerous. The writer would no sooner carry matches than dynamite about his tobacco sheds.—H. E. Tweed, Jan. 12, 1914.

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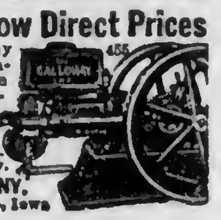

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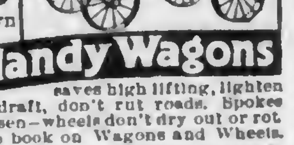

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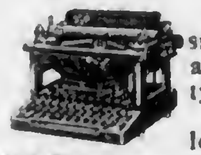

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Veterinary

(Conducted by W. C. Fair, V. S.)

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Heifer has Warts.—During the spring f 1912 we bought a two-year-old heifer. t that time she had a small wart on eft eye lid. We did not think that uch harm would result, but now the art is about the size of an English alnut with a cracked, rough (not sore) urface. Here and there over the body nd head small warts are appearing, anging in size from a large shot to a azel nut; also rough in appearance. The heifer is now fresh and otherwise s a promising young cow, eats good nd appears healthy—milk very rich nd clean. Would you consider it all ight? Can anything be done to overome these warts? A. F. S., Piketown, Pa.—The nicest way to get rid of a art is to remove it with scissors, or wist it off with the fingers, or forceps, r ligature by means of a rubber band, ilk thread, linen thread or horse hair; hen, apply tincture of iron to roots. y applying sweet oil or castor oil hey might go away and you had beter give her a tablespoonful of Fowler's olution at a dose, 2 or 3 times a day. er milk can be used with safety.

Tongue Loller.—I have a seven-yearld mare that, when traveling on road, sually hangs tongue out of mouth to ft side. I am anxious to know if this a disease and what I had better do bout it? H. L., Hartsville, Pa.—This a habit. I hardly know how it is acuired, unless it is the result of improerly bitting a colt before it is driven harness. Invariably a tongue loller laces tongue over bit and then drops ongue out of mouth. In some cases I ave overcome the difficulty by placing ar bit by means of a nose strap in roof mouth; in others bending a bar bit that it arches to roof of mouth, leavg a place for tongue under bar center. here are also bits made with a plate or oon fastened to center of bit which tends well up in mouth, preventing a rse from getting tongue over bit. urthermore, a steel bit covered with ather or a chain bit covered with rubr sometimes overcomes this difficulty. hese hints may lead you to figure out e best appliance to overcome the diffilty.

Fibrous Growth.—I have an old, but ry good cow that has a swelling as rge as my two fists along side of her ctum. Swelling does not seem to be ry sore, not much if any inflamed and does not appear to give her any inonvenience or pain. This bunch has a rt of fleshy feeling and came on her out four weeks ago. It seemed to ow itself two weeks before she calv. It has not enlarged much if any nce calving time, but has not decreasin size. Is her milk fit to use? G. I. ., Paxinos, Pa.—It is possible that she ceived a blow which produced a seris abscess or caused a fibrous bunch to ow. Apply 1 part tincture iodine d 3 parts camphorated oil to bunch, e a day, and if the bunch is soft, ctuating at all on pressure, it should opened. Then inject small quantity tincture of iodine a few times and e will soon get well. A bunch of s kind will not in any way affect e quality of milk.

Ringbone.—We have an old white rse which we recently purchased that sound in every particular, except has a ringbone on each hind leg. far as I can tell, he is not lame and a good work horse. If these bunches uld be taken off without leaving a ar, it would make him much more lable and for this reason I would e to have him treated. M. K. S., rth Branch, Pa.—A horse of this d should be left alone, for it is possi to make him lame by applying treatnt. I am sure it is bad practice to anything for him until such time as shows soreness or lameness.

Scurvy in Hogs.—Nearly all my hogs m to have a rough scaly sort of skin, t nearly all of them are thriving. hat had I better do for them? F. T. , Hookstown, Pa.—Apply 1 part coalr disinfectant and 10 parts vaseline, ice a week. I find hogs are much re quiet to handle during the night.

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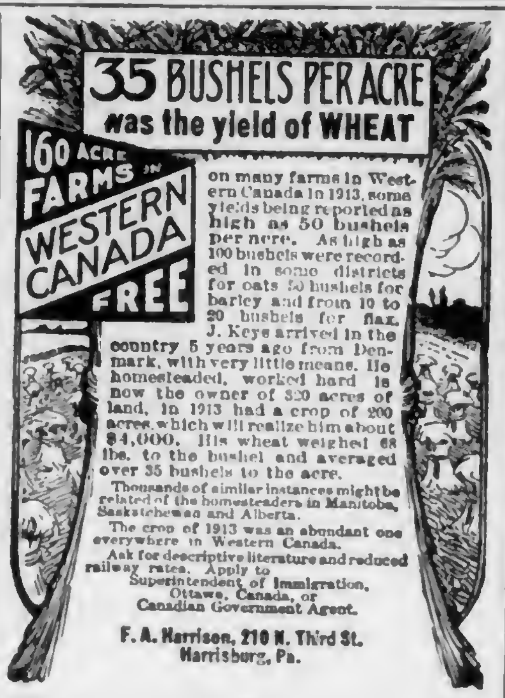

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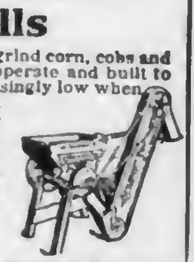

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Agee Prof Alva
Rutger's College
Ag 13

Farmers' Marketing Problems.

By SHELDON W. FUNK,
Berks Co., Pa.

As a State Farm Adviser and an institute lecturer, it has been my good fortune to visit a number of localities in which the farmers have been far sighted enough to see the great advantages to be derived from co-operative selling. As a gardener and fruit grower, my observations have been mainly along these lines, but what is applicable to fruit and vegetables will also apply to farm produce in general. Several years ago I visited a community where they had a large quantity of apples, many of which were rotting in the orchard. These people had always depended upon buyers to come to their section and purchase the fruit out of the orchard. The price had always been low, but still they were fairly well satisfied because this method eliminated much of the harvesting trouble and also because they had never taken the pains to investigate outside market conditions.

The year of which I speak happened to be a good apple year over the entire country. The cold storage plants had more apples booked than they could handle, and storage for the late comers was simply out of the question. Realizing this fact the buyers went into the section and where heretofore they had been accustomed to paying from $1.75 to $2.00 per barrel, they now offered from 60 to 75 cents per barrel even tho at that very time apples were listed on the market at from $2.50 to $3.00 per barrel. Some of the farmers finally sold at 75 cents, but others became indignant and decided to rent storage for themselves. Failing in this and not knowing a good commission man in the city, they were unable to better the situation; but rather than sell to the buyer at 75 cents per barrel, they allowed the fruit to rot in the orchard. On the other hand, men who had procured storage before the picking time realized, during this same year, from $3 to $5 per barrel. This is only one instance of many with which I have come in contact in which the producers were entirely at the mercy of the buyer.

We often hear the statement that prices are governed by supply and demand and this is true with a staple product as apples or potatoes, for instance. But frequently with more perishable produce, as peaches and some vegetables, the price is governed by the supply and demand only for a limited territory. I have in mind several such instances in the peach market this last year. One small area in particular, say with a diameter of 50 miles, had almost a full crop of peaches. Practically all of this fruit went into one market in southeastern Pennsylvania. For a time that market was glutted and prices dropped as low as from 75 to 90 cents per ½-bushel basket of very nice fruit; while within a distance of from 100 to 200 miles from this very market the people were clamoring for peaches at from $1.75 to $2.00 per ½-bushel basket. The growers could not take advantage of this opportunity because they had no one to tell them concerning outside market conditions. Even had they been aware of these prices they could not have shipped in bulk because most of the growers did not have a sufficient amount of fruit ripening at one time to fill a car, and not being organized they could not ship together.

The section around Norristown, Montgomery County, is very well adapted to the growing of fruit and vegetables; in fact, nowhere else in the state have I found peaches planted so generously. Five or six years ago these men worked on the plan of survival of the fittest. They carted produce to Norristown and took whatever they could get. Say, for instance, that tomatoes were selling at 35 cents per basket. Mr. Jones comes in with a rather large load today. Fearing that he will not be able to close out he drops to 30 cents in order to unload faster. Tomorrow Mr. Brown comes in with a load at 35 cents. He soon learns, however, that Jones sold his at 30 cents; so Brown, thinking that the market is glutted, becomes frightened and drops to 25 cents. By the end of the week tomatoes are selling at 15 cents per basket, at which price there is no money to be made.

This, I say, was the case a number of years ago. But these men soon realized that they could not make ends meet with such systems of marketing. So a number of them, with A. R. Tyson as their leader, formed what is known as the Norristown Wholesalers' Association. The membership fee is $1.00, but there are no dues, the only requirement being that members refrain from retailing fruit or vegetables in Norristown. These men then went to a leading commission merchant in their town with a proposition, viz: to handle the Association's products exclusively at 10 per cent commission. All of the produce grown by these men is now taken into Norristown and unloaded at the commission house, after which the team goes back to the farm, without wasting time in retailing. The commission house then disposes of the produce, taking care to get best prices. The growers are no longer compelled to

MAIN BUILDING OF THE SPARKS AGRICULTURAL HIGH SCHOOL, BALTIMORE CO., MD.

sell at a sacrifice because they can control the market.

Granting that tomatoes are again selling for 35 cents and there is a sudden glut in the market, instead of overstocking Norristown with tomatoes the commission man keeps in touch with the outside markets. If prices are right in the coal regions they pack a car and ship there. If prices are low in all markets the tomatoes are shipped to the canneries. Even granting that no profit is made on the goods shipped, which is not the case, they at least relieve the Norristown market and keep prices level there.

It is an easy matter to drop the price of a commodity but it is not nearly so easy to raise it. In our smaller towns, where prices are not governed so much by supply and demand, a drop in price is usually permanent. What the growers of Norristown can do, others can do as well. If we are to receive our just share of the proceeds from our crops today we must fight for them, and the best way seems to fight a trust with a trust.

Those who watched the apple market last year will remember that the wholesale price of apples held for a long time at from $2.50 to $3.50 per barrel. Returns did not go higher until May when apples were becoming very scarce. Then prices jumped to $4 and $5 per barrel. But while the producer was receiving $2.50 and $3.00, the consumer was paying $5 and $6. If he bought in half-bushel lots, he paid at the rate of $7 and $7.50 per barrel. What was the result? At $7 per barrel the consumption of apples all over the country is much less than when the prices are $5.00 per barrel. By holding up the price to the consumer, the middleman lowered the demand. In this way he naturally held down the price to the producer and increased his profits at both ends, at the same time handling fewer barrels but making more money.

We producers need middle-men, that is, a certain number of them, and we are willing to allow them a reasonable profit for their services. But when they try to rob us by taking as much as 50 percent we are naturally going to object. To suit our purpose, Lincoln's famous statement might well be changed to read "you can rob some of the farmers all of the time and all of the farmers some of the time; but you can't rob all of the farmers all of the time." We believe the day is not far distant when there will be a co-operative selling association in every community; communities will be united, and they will grow those crops which are best adapted to their conditions and their markets. Where possible they will deal thru an honest commission man; or if they cannot find such, will take a good hustling young man from their own community, put him in the city and give him a salary or a percentage to keep track of all the markets and handle all their produce direct. In this way the farmers will receive a higher price for their products; the consumer will be able to buy his food at a lower figure and any dishonest commission men will be compelled to look elsewhere for a living.

An Object Lesson in Potato Growing.

Every man who grows potatoes knows that in every row he finds hills where every potato comes out with tops, and others where, in pulling, he fails to get a single one, but finds them distributed all through the hill. This fact we all have noted, yet, somehow, I question if any of us have taken in the full significance. For some years I have been experimenting with seedlings direct from the seed boll. Having three distinct varieties, with different characteristics, they have been planted side by side and given like treatment to find what each could do.

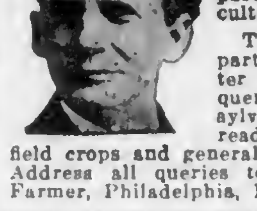
In digging in 1913 I was struck by the fact that in every hill in No. 1, each potato clustered about the center. Finding this at the start I carefully noted every hill only to get the same condition. The total yield was good and the general type desirable. When I struck No. 2, something different was seen. There was not a potato about the center, and hardly any within six or eight inches. Every one was at the extremity of the hill. This held thruout the row. It set my thinker at work, and I found myself asking this question: If I was obliged to choose one of the two varieties, and everything else was equal, which would I take? That is, if distribution of tubers in the hill was the only visible difference, which one would I select? What say you, readers of the Pennsylvania Farmer? There is a reason for or against any choice, and we want to find it to help over some other hard places. It must make a big difference when we come to select seed. I have none to sell, so there is no little joker here; but I was so stirred in my field that I want to stir others.

I have asked this question in many laces when speaking, and find a difference of opinion. There is forced upon me the conviction that here, in this seemingly little matter of location of tubers in the hill, is one of the important factors in potato growing. Without question potatoes absorb food, and if so, the wider distribution seems desirable, provided the food supply is scattered thru the hill.

Answering the query by my own experience, I certainly would take that variety which was most removed from a given center, being certain of larger yield, if not of higher quality. Surely I would also look for greater uniformity than when crowded about the middle of the hill. Very likely others have solved this problem and have their line of action well established but, going thru many fields, and noting the marked differences in this respect I am led to put the proposition before the readers of the Farmer and ask their experience.

We want more and better potatoes in every hill. How can we get them? In a prominent prize contest, the past year, the highest prize was won by a Maine man with 502 6-10 bushels from a measured acre; but the best part of the story is that these graded 75.28 percent table size; 10.67 percent too large, and 14.05 percent too small. This lot carried17.17 percent of starch, thus attesting their quality for the table. If this grower can eliminate any part of the over-large, that is, more than 12 ounces, or under-sized, those below 4 ounces, how greatly would the crop be improved! No man knows to what extent this can be done, and it offers one of the attractive lines for the wide-awake worker and thinker. Potatoes are to form one of the leading cash crops on the majority of farms, but there are fundumental principles at the heart of the problem that we must work out and apply. Out of the experience of many this can be done, provided each one follows a single thread to a fixed conclusion. In this way we can all be helpers, one of the other.—Dr. G. M. Twitchell, Androscoggin Co., Me.

Farm Counselor Department



By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Top-Dressing Wheat

"I want to give my wheat a top-dressing of commercial fertilizer in the spring. The fertilizer is a 2-10-5 formula, made of high-grade acid phosphate, tankage and muriate of potash. How soon in spring should it be applied for best results? Should it be harrowed in with clover seed, or left on the top of the ground?—W. F. H., Maryland.

Our correspondent touches upon two practices that are proving to be beneficial: The top-dressing of winter grain and grass, and harrowing in the grass seed in the spring. The time to apply both the grass seed and the fertilizer is as soon as the soil is dry enough to harrow. Tie up the metal hose of the grain drill so they will not drag, and use as in other drilling. Then sow the grass seed. To cover, use a spike harrow—a 50 or 60-tooth steel frame preferred. Slant the teeth back one notch. Harrow the same direction the grain was drilled. It is sometimes necessary to give the harrowing a half lap if the soil is clayey and baked hard.

A few have been recommending this method of seeding winter grain to grass for years, but a great many farmers are afraid to harrow their wheat and rye in the spring. All such seeding has been done this way at the Homestead Farm for ten years and we have never failed to have a perfect stand. Harrowing the grain benefits it as it breaks up the hard, caked surface. It insures the covering of the grass seed and to such depth that it does not die after sprouting if a spell of dry weather follows as is the case when left on top. The practice of sowing the grass seed on the snow or the supposed last frozen ground, leaves a great deal of seed to die on the surface, and is at best a hap-hazard method.

When Doctors Disagree

I have been reading recently two books on soil fertility, written by two eminent authorities. I find much in each that is helpful and instructive. The findings of intelligent men of research are well worth study by student and farmer. The unfortunate part is that opposite opinions concerning some very important matters are put forth so emphatically as to almost leave the impression that a contentious spirit occasionally gets the better of the scientific mind. Assuming that a thing is true and then setting out to prove the assumption to be right is not scientific investigation.

But even these differences should not discourage or lessen our interest in the work of these men. They are worthy of a study. In the meantime, let us put into practice the things upon which men agree as necessary in order to maintain fertility, viz: control of soil moisture, deeper plowing and more thoro cultivation; the proper care and application of manure; the increase of humus-making material by heavier sods, and the cover-crops; proper rotation and the judicious use of fertilizers.

A Correction

A typographical error in answer to H. C. K. on page 23, issue Jan. 10 makes it read 11½ percent nitrogen when 1½ percent was meant.—R. P. K.

LAYING THE FOUNDATION RIGHT

When plans are in the making for farm work, it may be well to get down to fundamentals and reconsider foundations. Is the farm being conducted on right lines in its general outlay and plan? Do the man, the farm, the location, and the type of farming "nick well?" Perhaps no one thing more often prevents success than the failure to make these things harmonize.

First to be considered is the man himself. What are his tastes, temperament and natural ability? True success must come in the line one loves, and the first problem should be to get into that line if possible. Unfortunately we are so constituted that we cannot always justly estimate our own abilities and shortcomings, but so far as we may, they should receive great weight.

Are we adapting our work to the farm, to its soil, its topography, and its location? Perhaps we are keeping a dairy on a dry and poor watered farm much better adapted to fruit or to sheep; or better fitted to grow hay. The choice of a farm is of primary importance and should be governed first of all by the tastes of the farmer. To the farmer already located the solution of the problem must often lie thru compromise, rather than thru change of farms.

Land values may influence materially the type of farming. Where the capital value of land per acre is high, the crops and the methods must be intensive to afford adequate return on the investment.

Where values are low, money may yield a better return invested in land than invested in labor. In other words it may be more profitable to farm more land and get from it less per acre than to farm less and farm it better, with a higher yield per acre. It should be remembered that the product per man is more important to the farmer than the product per acre, altho to the community at large the latter may be of greater concern.

The relation of buildings to type of farming is important. Dairy farming calls for a heavy outlay in buildings and building equipment, while sheep farming or fruit farming demand relatively little. This is an important consideration to the man of limited means.

The distance from the market or shipping point, the character of the highway between, and the shipping facilities beyond all have an important bearing on the problem. Potatoes are a good money crop on a farm where soil and climate are right, but if that farm lies far from the shipping point the cost of hauling may be too heavy a charge to make them profitable. I have loaded fifty or more dollars worth of purebred pigs into a one-horse spring wagon and started off to the railway station on the trot, when to have delivered the same value in potatoes at the prices prevailing at the time would have taken at least three slow trips with a team and heavily-loaded wagon.

The available market is of primary importance in the problem of adaptability. My own farm is remote from large markets. I must compete in the great general markets of the country or in the personal market which can be reached only by advertising, and thus

securing the individual customers whom I never meet face to face. The man who can load his wagon with whatever may happen to be available from the farm and drive directly to the consumer may succeed with crops and with methods which to me would be ruinous.

I must look first to the producing end, must produce as much and as cheaply as possible of those things which go to the great wholesale markets. He must look well to the selling end to see that the cost of selling does not more than offset the extra price which he receives. It may pay better to produce more and sell at the lower wholesale price than to get the higher retail price with the added cost of selling and the smaller production which is likely to occur.

The character of the community, likewise deserves consideration. If producing for the general wholesale market there is a manifest advantage in being in harmony with the neighborhood, particularly if that neighborhood is known for any special line of production. This brings more buyers and better marketing facilities.—Fred W. Card, Bradford Co., Pa.

County Farm Demonstrators

WILL THEY FULFILL THEIR MISSION?

By Prof. A. L. Clark, New Jersey Experiment Station.

It is said that County Demonstrators will fill the gap between the Experiment Station and the farm; that they will take to the farmers the results obtained at the experiment stations. This alone will be a big undertaking. It has only been in the last few years that this particular line of work was considered important enough to have special departments and qualified men connected with the stations to do some of this extension work. In the past much of the benefits of costly and painstaking experiments have been lost because they were not placed before the farmers in a manner interesting enough to attract their attention and practical enough to command their respect. Very few people who are not themselves practicing farmers are able to thoroly understand the farmer's viewpoint and so are unable to make convincing arguments or discuss farm problems intelligently with them. Then again, the more general principles of soil fertility and crop production are becoming much more widely understood and the demands are becoming greater for special knowledge in certain lines of work. This condition makes it more difficult for the college professor or station worker to carry on this kind of work, and more necessary to have a practical man in each district.

There are a hundred other ways that the farm demonstrator can aid the farmers in his district. As a nucleus for the exchange of thoughts and methods he should be a source of learning. Many localities need only a leader to help them in organized efforts. True rural co-operation includes many more things than just buying and selling. In some places it may well develop into some special crop production. The soil and climate may be found to be especially adapted to the raising of a certain variety or crop. Or the type of farming carried on may be found to be desirable for some certain system of production. Then again, the labor problem, fast becoming more and more difficult to overcome, may require the special attention of the demonstrator. Co-operative ownership of superior breeding sires may well be developed by allowing an uninterested party to have charge of the management. By comparison, such a man in any community can undoubtedly select the best special methods practiced in the county, aid in the selection and distribution of seed particularly adapted for the purpose and conditions at hand, and so, in a thousand ways, find opportunity to assist the producers of the necessities of life in becoming more efficient.

Are We Expecting Too Much

It seems to be a very common opinion among those who have become interested in this work that it will very likely be an exceedingly difficult position. We may as well acknowledge that as a class farmers are not eager to take advice or to acknowledge self deficiencies. Because farm life is naturally independent and somewhat isolated, we have become imbued with the ideas of self sufficiency. It is a matter that every farmer should give heed to, however, that in the most prosperous communities this characteristic is lacking and at the same time real independence has grown with prosperity, and the spirit of initiative and industry has become accentuated.

The great question which every county should ask itself is, how are we going to receive this farm demonstrator. Are you going to take him into your midst and act toward him as a paid expert to get right into the game and do all he can to make farming in your county more prosperous? Are you going to listen to his advice? More than that, are you going to take your problems to him and discuss them? Are you going to show your confidence in him from the start and so pave the way toward general benefits to all? There will be plenty who will hold aloof, thereby not only preventing themselves from securing much benefit but by example inducing others to do the same.

Any man, no matter who he may be or what he may know, is going to make many mistakes. If it was possible to secure the best farmer in each county at present to act as the demonstrator, there would be many mistakes made. Those who seem to realize their mistakes the least are the ones who are going to find the most mistakes in the expert. One of the really big things for the demonstrator to do is to learn. He will be in the best possible position to learn all the ins and outs of farming in the county. If he will only do this it seems that he cannot fail to do a great service; for a man cannot be full of good things and mix with other men every day who want some of those things without imparting a considerable part of his supply to them.

It should not be the duty of the agent to attempt to distribute his wares, in this case knowledge, promiscuously. To accomplish any real good they must be received in the proper spirit. Advice should be only given when asked. It will be entirely impracticable for him to act the part of an efficiency expert in a manufacturing plant or business house. It would be ideal perhaps in some ways if he could have the liberty and the power to enforce progressive business methods on all farms in his county. However, I do not think we want to see such practice. The independence of farm life should by all means be preserved, but the people should receive the agent with open arms and work with him and assist him, all to the end of making their farming more efficient. He can do nothing without the aid and support of the people.

We should not expect him to come into our midst and work great changes or introduce improved methods of combatting plant diseases, fighting insect enemies, growing better crops or building up the soil without the co-operation of a large part of the farmers. There is bound to be a number of self satisfied, "do as my father did" kind that will act as a millstone around the agent's neck. Which are you going to be, an open-mined, courageous co-worker, or a scoffer and a hindrance to progress? There is no use of expecting too much. Hope for much, expect little and be on the lookout for opportunities. There should be no shadow of doubt in any thinking man's head that much improvement is bound to come from having a trained man in a community to act as a distributing agent of special knowledge and a binding link for organized progress. The best qualified men for these positions can not be induced to take them. The point I wish to make is that any intelligent, more or less trained and observant man, can add greatly to the output of a farming community provided only that the farmers themselves do their part.

The Requirements of a County Demonstrator

This is a very serious problem, especially when we realize that no men can be secured that seem to come up to the standard for this work. The biggest part of the whole proposition is the beginning. If a man can stay in a district three years and have any support at all he should be able to show by that time the wisdom of certain reforms or improved methods, simply thru his personal observations. A man will not stay, nor can he work with any degree of earnestness, unless he has the support of the farmers. So that the first thing for an agent to do is to secure the confidence of his future co-laborers. Here is where "personality" in the farm demonstrator will count. In the first place he must be imbued with the spirit of helpfulness.

Actual farm experience is absolutely necessary to enable one to realize the farmers' problems and offer solutions in a practical way and in such a manner as to be received and acted upon. Special experience in the certain lines of production carried on in the county is an excellent asset. A broad general knowledge of the principles of crop production and animal husbandry is of vastly more importance, together with an acquired or natural instinct toward systematic effort. At the present time there are no trained men for this kind of work. The men who undertake it must map out their own line of work with no past records of work achieved or results obtained to guide them. So a man must have plenty of that power of initiative and then the determination to stick to what he believes is the proper course in spite of criticism and fault finding.

The Position, the Work and the Man

I think when we consider the proposition as a whole and from the standpoint of the farmer and the demonstrator we will all agree that it is a difficult position to fill. This should not lead us to hesitate about pushing this work. On the contrary it should be an incentive toward every resident in a community interesting himself in the movement and giving it his moral support. There could be no more helpful effort than to have the dwellers in the villages and cities join with the rural people in this undertaking and so not only add to the range of helpfulness but aid greatly in bringing into closer connection the producers and the consumers, the farmers and the city people.

The man must be qualified without a question. He will have untold problems to solve; a new road to hew thru an unexplored country. It seems to me however, that the greatest question before us today in this matter is how are the farmers going to receive this agent.

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Horticulture

ADVANTAGES OF A FORCING HOUSE OVER A MANURE HOTBED

At this time the farmer is urged to make hot beds as a step toward having early vegetables. For this purpose the old-time standard advice is to build a manure hotbed by digging down into the ground and filling the hole with fermenting manure, or by putting the manure on top of ground and boarding up the sides, covering the bed with glass, etc. The young man, or the old man, who has not tried this antiquated method will almost always fail the first time. The manure does not heat as he expects it will or it gets too hot and burns out, or he gets too little earth on top and puts his seeds in before it has cooled down enough, hence burning his seed to death. Then if all does go right until he gets his plants started, there comes a blizzard when he dare not raise the sash to look at and air his plants, and when he does look they have spindled up and become so tender that they are ruined.

A New Method

My present plan does away with all those inconveniences and may be adopted by any farmer in a limited way at little expense. At the same time it furnishes a pleasant and enjoyable pastime for the weaker members of the household. Just build a frame, say 10 ft. square with a gable roof, and stretch a 4-yard-wide cotton covering, well oiled, over it Make a common shelf stand with cross boards along each side to set plant boxes upon. Run a stove pipe under this stand and out of the house at one end; have a small second-hand stove, or one of these sheet-iron heaters that cost only $2 or $3, to heat the house with. Put the stove down low in the dirt on one side; have shallow boxes 1 ft wide 18 in. long and 3 in. deep. Fill these with fine earth, pressed down smooth with a flat board.

SPRAYING THE APPLE ORDHARD ON THE RUTGERS COLLEGE FARM, N. J.

Then sow seed of any kind thinly on top of the earth and sift a covering of fine earth over the seed. Then press down again. Set the box on the cross boards over the stove and all along and above the stovepipe. With a cover well oiled with boiled linseed or paraffin oil, the amount of heat that will be developed inside at the time of year when the sun is getting high will astonish anyone who has never tried it. You will rarely find a day after March 1 when the house will not be warm enough without fire in the stove.

As soon as the plants come up the cabbage, cauliflower, lettuce and such kinds should be put back from the stove and allowed to grow slower, as they soon become too slender in the warm inside air.

The Work of Transplanting

When the plants show the third or fourth leaf they should be transplanted into other boxes of the same size. If I have plenty of space I put 24 plants in a box 1 ft. wide and 18 in. long—6 plants one way and four the other. If I want to crowd I can put 48 plants in one of these boxes just as well. At time of transplanting other boxes of seed can be sown, and all lettuce, cabbage, celery, beets and such plants can be moved out of the house and put under cold frames covered with plain cotton cloth until hardened enough to be exposed to outdoor air, which will take two or three days' time. After that they can be set out or be left standing in the boxes until you want to use them. The tomato, pepper, egg-plant, cucumber, melon, squash and like plants are taken out later and hardened in the same manner—by first putting under cloth covers, then with covers off at night, then in the shade of a building, fence or tree, and lastly right out in the open sun. By this process I raise tomato and even cabbage plants that can be set out in the hot sun in the middle of the day without ever wilting or showing any stoppage of growth.

The house system enables one to control the heat by regulating the fire and by removing the boxes from one part of the house to another, when occasion demands. One can stand up there or sit down to his work, while with the old manure hotbed system one has to stoop or kneel and work in the cold raw winds in order to secure success. The plant house described will not cost any more than a hotbed of the same capacity.—A. M. Smith.

GROWING FROST PROOF CABBAGE PLANTS

In former years we found it impossible to grow cabbage plants from spring sown seed, of sufficient hardiness to stand early setting. The plants were always spindling and tender so that they had to be protected in the hothouse until settled weather. Then when set, unless conditions were exceptionally favorable for their growth, they would not head in time for the early market. Of late years we have been sowing the seed in the fall in a cold frame and wintering the plants over. By this method we have been enabled to harvest our cabbage crop early, and have won no little reputation among local gardeners as growers of hardy cabbage plants. We often sell enough plants among these gardeners and farmers to pay for the entire cost of growing the plants; so that, altho it requires considerable more labor to grow the plants by this method, we are well paid for the trouble. Our method of growing these hardy cabbage plants is as follows:

For the location of the cold frame we choose a place sheltered from the North and West winds. Our cold frames are one foot high in the north side and six inches high on the south. They are built of sufficient width to accommodate the 4 by 6 ft. sash. The soil within is excavated to a depth of about three inches. This space is filled with short, well decayed horse manure. It is not desirable to use fermenting manure as the bottom heat would force the cabbage into too rapid growth. In order to get the manure at a uniform depth we use, a gauge, a 3 by 2-inch timber cut to a length a little short of the inside of the cold frame. A narrow strip is filled in with manure. It is then raked off level with the top of the three inch side of the timber. The gauge is then moved on down the frame, another strip filled in, and so on. After the three inch layer of manure is in the frame it is slightly packed by rolling a board or light plank over it. As soon as this is done we spread on a layer of sandy loam rich in humus. We spread this but two inches deep. Accordingly the timber used in gauging the manure is turned so that the two-inch side is vertical when used for regulating the depth of the soil applied.

In our locality we have found the last week in November to be the best time for sowing the seed. For the early crop we sow seed of the Early Jersey Wakefield. The Copenhagen Market is slightly later but it heads more uniformly and grows heads much larger than Early Jersey Wakefield, so that, in the hands of some growers, it pays quite as well, if not better than Early Jersey Wakefield. We also usually plant a few seed of the Flat Dutch (A late heading variety) so as to have a succession. In sowing the seed we mark out in shallow rows crossing the frame three inches apart, one inch wide and about a third of an inch deep. The seed is scattered along in the rows by hand, using about one ounce of seed under every sash. (Our sashes are 4 feet wide and 6 feet long.) The seed are covered by scraping the soil over them with a light board. After they are covered uniformly from a quarter to a third of an inch the soil is packed slightly over them; and, if it is not quite moist, it is given a light sprinkling of water.

If the early part of the winter is warm it will be necessary to keep the sash raised in order not to force the cabbage plants into too rapid growth. It is not necessary or desirable that they should grow more than large enough to form the third leaf before the first of January. Thruout the winter care must be taken, whenever it becomes necessary to water them, not to apply too much at a time. One is very apt to do this, especially if there comes a bright warm period. But it is better to apply the water in small amounts, and more often if necessary, rather than apply a large quantity and run the risk of losing the plants by "damping off" should a cold rainy period follow.

It is only necessary to give more protection than the sash furnish during the severest cold weather. When the cold frame is made we pile soil up against the sides. This furnishes considerable protection. Then on very cold nights we cover the sash with a very thick layer of hay. This prevents severe freezing unless we have several days of zero weather. At such times quite a crust will form over the surface of the bed. But this will do no harm as long as the bed and the plants are allowed to thaw out gradually. We never uncover the bed so that the direct rays of the sun can strike it while it is frozen. In times of severe snowstorms the bed sometimes remains covered for a week at a time with no injurious effects. It should, however, be uncovered as soon as possible on such occasions, for the heat of the earth, confined by the deep layer of hay and snow, causes the cabbage to make a white tender growth. Then, if it is exposed to a freeze, considerable injury may result.

In early March, when the first warm days of spring come, the sash should be well raised, or removed entirely during the day so as to prevent the plants from making too rapid growth. By the twentieth of March the plants should have made sufficient growth to permit of their being set in the field. Even tho we are unable some years to prepare our ground by that date, the cabbage plants are strong and hardy enough to need no protection whatever from the sash. We remove them from the cabbage frame every year about that date, and use the frames to harden off tomato plants.

We secure from 1,000 to 1,500 plants on an average of these frost proof cabbage, per sash. When set out in the spring they start right off to growing. If there happens to come a heavy frost or even snow after they are set in the field, there is no harm done. They will stop growing as long as the cold spell continues, but they do not lose their tops like tender hot-house grown cabbage under similar circumstances. Furthermore the frost-proof cabbages are all marketed; and the ground, upon which they grew planted to another crop, by the time the tender spring planted cabbage is ready to harvest.—Harris T. Kille, Gloucester Co., N. J.

SMALL FRUITS

The strawberry is the only one of the small fruits that is cultivated extensively in this State. There is a good profit in gooseberries, currants, raspberries, blackberries and dewberries and when properly managed these can be made to yield as well as strawberries. Bulletin 59 of the Michigan Experiment Station at East Lansing, Mich. gives full cultural directions for each of these fruits and the fruit grower would do well to study this bulletin carefully and apply some of its teachings.

Concrete Books Distributed.—As a part of its campaign to improve agricultural methods, the Pennsylvania Railroad is to distribute among the farmers along its lines 10,000 copies of a book describing the possible uses of concrete on the farm. The distribution will be made thru the office of the railroad's Agriculturist.

Cowpeas and Crimson Clover.—Circulars Nos. 27 and 28 of the New Jersey Experiment Station, New Brunswick, N. J., give a very complete outline of the value of these two legumes in farm practice, treating of soil preparation, time of planting, rate of seeding, fertilizers, inoculation methods and varieties as applying to these two crops.

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Forage Crops For The Dairy Farm.

First Prize Article, By H. E. Moats, Mercer Co., Pa.

The ordinary home-grown crops, such as corn, wheat, oats, buckwheat, barley, rye, timothy and mixed hay, contain an abundance of carbohydrates and fat, but as a rule are deficient in protein. To balance these feeds and secure as large a flow of milk as possible, dairymen have purchased large quantities of the concentrated protein feeding stuffs. On account of the increased demand, the price for such feeds has advanced in recent years much faster than dairy products, and as a mere matter of business economy it is necessary for the dairy farmers to grow as much protein as possible in their forage crops. I do not believe that it will be advisable to plan to eliminate altogether the purchase of concentrated-protein feeds, but we can certainly grow a much larger proportion on our farms than we are now doing. Fortunately we have a number of such crops to select from, to suit our soil, climate and crop rotation; and these same crops have a two-fold profit of supplying the needed protein and adding to the soil nitrogen, as they are all legumes.

Several years ago I realized that the growing of crops that contained a high percentage of protein was one of the great problems at Maplewood farm both to balance the low protein crops and to increase the nitrogen supply of the soil. At the time clover was becoming a very uncertain crop. We soon found that the use of lime would restore the clovers to their former luxuriousness. Since that time we have been experimenting with several other crops, in the hope that we would be able to find one that would reduce our feeding expense. We have tried alfalfa, cowpeas, soy beans, Canada field peas, vetch, and crimson clover with more or less success.

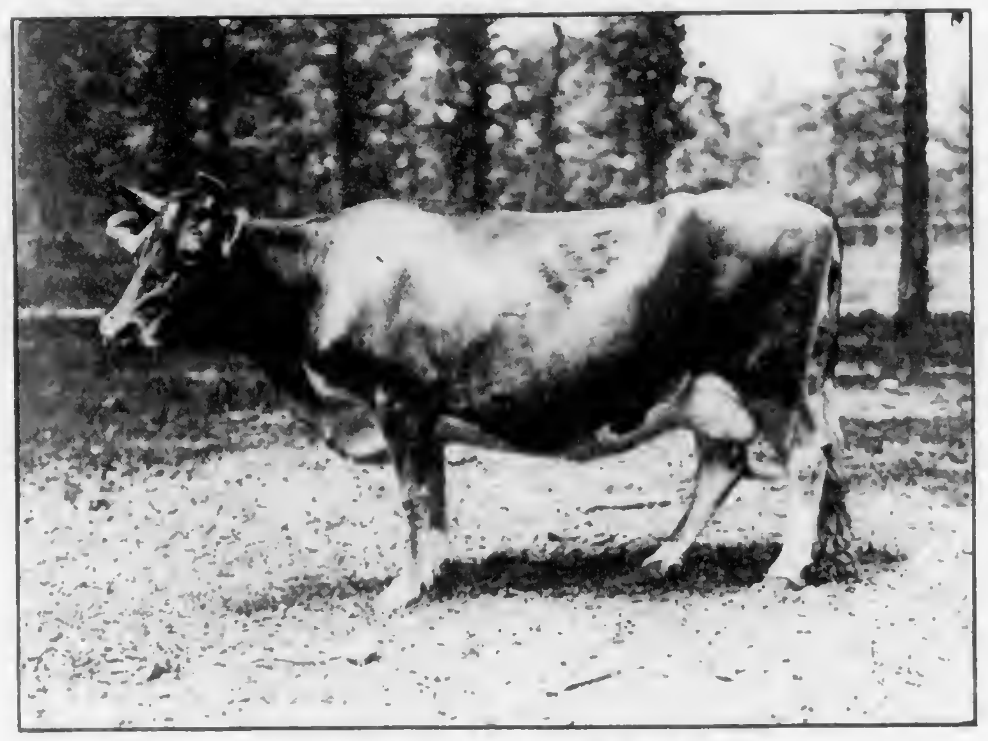
Alfalfa has not been a total failure with us, but it has cost more to grow, ton for ton, than the cost of many of the concentrated feeds on the market. We seem to be too far north to grow crimson clover with any degree of certainty, and the same rule holds good with cowpeas. We are still experimenting with vetch in the hope that it will be a profitable crop.

We have found, after several years of experimenting, that red and alsike clover, field peas and soy beans are the crops best adapted to our soil and climate, both for soiling and winter feed. Without doubt red clover is one of our most valuable protein crops. Where we have supplied the lime to meet the deficiency in the soil, and applied a light coat of stable manure as a top dressing, previous to seeding, we have not had a failure.

Red clover can be produced cheaper for the feeding value than any other protein crop that we have yet tried, with the possible exception of soy beans. While it does not yield as much per acre as alfalfa, yet it will grow much more readily on most soils and is better adapted to a short rotation. As a soiling crop, red clover can be used from about the first of June until killing frosts, except for a short time during the fore part of July, which time can be filled in with Canada field peas and oats. The second crop can be fed as a supplement to green corn and helps to balance the low protein content of the corn plant. Alsike clover is a much surer crop than red clover, as it will pass thru weather conditions which would be detrimental to red clover. Alsike will not yield as much hay per acre as red clover, but the hay is richer and seems to be preferred by all stock.

Canada field peas are best adapted as a soiling crop, but when grown with oats make a hay which is about as rich as clover. The combination is an excellent crop to grow when clover has failed for any reason. Peas are ready to harvest before second-crop clover and soy beans, and at a time when pasture grasses are becoming dry and woody. Peas prefer cool weather and for this reason should be planted as early in the spring as the soil can be worked. They will grow close to the ground unless sown with oats or barley to hold them up and make harvesting easier. A good method of seeding is to drill six pecks of peas, four or five inches deep; then drill an equal amount of oats at the usual depth.

After growing soy beans for several years I am firmly convinced that this crop only needs to become better known to be more extensively grown. It will more nearly solve the protein problem on our dairy farms than any other crop that I know of at the present time. It is not particular in regard to the soil and is suited to all soils that will grow a fair crop of corn. There are a large number of varieties differing from one another in yield of grain and forage, as well as coarseness of stems. We select one or more varieties to suit our needs. Soy beans contain more protein than oil meal, and the cured hay is richer in protein than alfalfa, which easily gives it a lead of all our home-grown feeds.



A TYPEY INDIVIDUAL THAT WILL RESPOND TO WISE FEEDING.

Fifteen to thirty bushels of grain and two or three tons of hay can be obtained per acre, and either grain or hay is greedily eaten by all stock. I believe that soy beans can be harvested more economically when cut and mixed with silage corn in the silo than any other method. But if favorable weather prevails at harvest time, they can be cured for hay. Even after the soys had been allowed to ripen and were exposed to very changeable weather for some time, in order to cure for threshing we were surprised when our cows much preferred this damaged fodder to a good quality of clover hay. We prefer drilling the soys in rows about twenty-eight inches apart, as a heavier crop can generally be secured. They should be planted soon after corn planting time, and need about the same cultivation as corn. Every dairyman should plan to plant some soy beans the coming season, either for hay, soiling or silage, as they will help to reduce the cost for protein feeding stuffs. Where alfalfa will grow well it should be used. Where it will not, use some one or more of the other legumes. Select the crop for your own location.

SECOND PRIZE ARTICLE

Corn and Alfalfa

Corn is King and Alfalfa is Queen when it comes to home-raised dairy feeds. Both of them can be grown successfully and profitably on nearly every farm in eastern United States, and if you have not tried to be the man behind such a throne you have not concerned yourself with raising better forage crops. These crops represent both sides of the balanced ration and if a dairyman was limited to only two feed crops, corn and alfalfa would make more milk than any other two which he could produce.

The fact that the big dairy farms now being established thruout the East always build large silos and plant a large acreage of alfalfa shows what faith they have in this combination. Since they are in a position to know and acquire the most satisfactory feeds it looks as if following their example would be good business.

The Walker-Gordon farm of New Jersey has 300 acres of alfalfa and the managers calculate that last year their alfalfa was worth $10,000 to them. The Wawa Dairy Farm, in Delaware County, Pennsylvania, where they are now milking 120 cows, this year had 85 acres of alfalfa and 160 acres of corn. Mr Henry Steward, the manager, says that if he had to give up these two crops he could not produce milk at a profit.

It is not always necessary to grow a greater variety of crops or increase the cultivated acreage in order to increase the value of home-grown forage crops. Often increasing the yield per acre will solve the problem. If two "blades of grass" are made to grow on a dairy farm where only one grew before, the extra blade will not represent such a problem as the same result would on a grain or truck farm where the questions of storage, marketing and demand have to be considered. Crop rotation always plays an important part in the introduction of new and untried crops, but corn and alfalfa may almost be considered the base of this question. The alfalfa will gather from the air an abundance of nitrogen which is the most expensive fertilizer element to purchase, and the depth to which its roots penetrate puts the ground in an ideal condition for a corn crop.

Mr. John W. Dulles, a dairyman in Chester County, two years ago had a field of alfalfa which he had mowed one year and then considered it too weedy for a maximum crop the second year. He plowed it in the spring for corn. Without applying any fertilizer or manure he produced 89.14 bushels of good corn an acre. It was husked and weighed three weeks after cutting and the yield was computed on the basis of 75 pounds to a bushel. The average height of the fodder was 11 feet. Objection has been raised to alfalfa by some farmers because it keeps them harvesting all summer and the first cutting calls them when the corn needs cultivating. It has been proven a number of times that a ton of alfalfa hay, properly cured, is equal in feeding value to a ton of wheat bran and that a good stand of alfalfa will cut from three to five tons of cured hay in a season. When wheat bran is selling for $30 a ton, as it does now in the East, it is possible to get feed worth $100 from an acre of alfatfa.

To grow alfalfa successfully, three things are essential: Lime, inoculation and drainage. Alfalfa is one of the few plants which refuses to grow without lime. It cannot perform its most important function of gathering nitrogen if the proper bacteria are not in the ground, and it cannot stand wet feet. The secret of success of the irrigated alfalfa in the West is the abundance of lime found there in the ground. There has been no rain to wash it away and when water is brought to the plants they make rapid growth. A deficiency of lime has probably caused more failures with this crop in the East than any other one thing.

One acre out of every three plowed each year in the United States is planted with Indian corn. It will produce more food material to the acre than any other crop which can be grown. Its great value lies at the foundation of this country's material prosperity. Dr. Armsby, by experiments made at Pennsylvania State College, has computed that when corn is fed ruminants only 46 percent of the total energy is lost, while 74 percent of the total energy of mixed hay and 94 percent of the total energy of wheat straw are lost in the process of digestion. For this reason corn meal or corn and cob meal are always used as the basis of a grain ration as they furnish cheapest the largest amount of net energy.

Science tells us also that 63 percent of the digestible food materials present in the corn plant are found in the ears and 37 percent in the stover. The best way to handle the stover so as to obtain the full 37 percent is the big problem in harvesting the corn crop. Where dairying has reached its greatest development within the last 30 years the silo has been the means of getting the greatest value from the corn crop. It conveniently stores with the least amount of labor the cheapest and best form of succulent feed for the winter. Some dry hay must always be fed with silage, and alfalfa hay is ideal for supplying the lack of protein in the silage.

Ex-Governor Hoard, of Wisconsin, figures that he can grow, harvest and put in the silo his corn at the rate of $1 a ton. Two tons of silage will equal the feeding value of one ton of timothy hay. If you think his estimate of cost is too low, you can figure what you can afford to have it cost you in the East where timothy hay sells for $20 a ton. The greatest testimony of farmers who have erected silos is that it enables them to sell hay which before had to go to the cows.

It is not to be understood that silage and alfalfa hay alone will produce milk at a profit. Cows will not consume enough of them to meet the demands of a large milk flow, maintain themselves and nourish an unborn calf. Some concentrates must be purchased. These should be bought on a basis of food value rather than price, and mixed with the home-grown feeds according to standards established by experience. Formulas laid down in Bulletin No. 114 of the Pennsylvania Station are as good as can be obtained. The point is that few successful dairymen can produce all their cow feed, but nearly all dairymen can materially reduce their feed bills by giving especial attention to corn and alfalfa.—Thos. H. Wittkorn, Delaware Co., Pa.

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PLANNING AHEAD FOR THE HERD

An important phase of herd management is to plan the management with reference to the season and conditions. A dairyman with a herd of 25 to 30 cows will find it necessary to replace several of the older cows with heifers or cows from other sources each year. By planning his dairy work so that he can raise six promising calves during the fall and winter when the other activities of the farm are not demanding his attention he will be independent of purchased cows, and the work can be done more cheaply and efficiently than would be the case if he started the calves at various times during the year.

If this method is practiced the calves will be large enough to go out to pasture along in June or July after the grass becomes sufficiently hardened to provide a maintenance ration and by the time his pigs will be large enough to make efficient use of the skim milk and forage crops. By a little thoughtful planning one may regulate the number of calves and pigs fed on the farm so as to profitably utilize the skim-milk, forage crops and waste feeds. He may also plan his breeding operations so that his cows will pay even profits thruout the year. Dry cows, idle equipment and unemployed help are things to be avoided on the well-managed dairy farm.—K.

THE WINTER'S FODDER.

One of the most serious problems for very many farmers to consider just at the present time is how to get the live stock that they wish to winter thru until spring in an economical and thrifty condition on the fodder at hand. In some cases, no doubt, it will be best to dispose of some of the live stock; while in others it may and probably will be best to feed less hay and roughage than has been the usual practice. If there is not enough home-grown grain, purchase other feeds.

This winter feeding of live stock is a question for each farmer to look over carefully and decide for himself as to the best course to pursue. Different circumstances call for different conclusions. It would seem best for each farmer to keep all the live stock that he can feed satisfactorily, as this is by far the most practical method of keeping up the fertility of the farm, a vital question for all farmers to consider. Animals of all kinds are high and not likely to be much lower in the near future, at least; and it is not likely that the old prices will ever return.—F. H. Dow, Steuben Co., N. Y.

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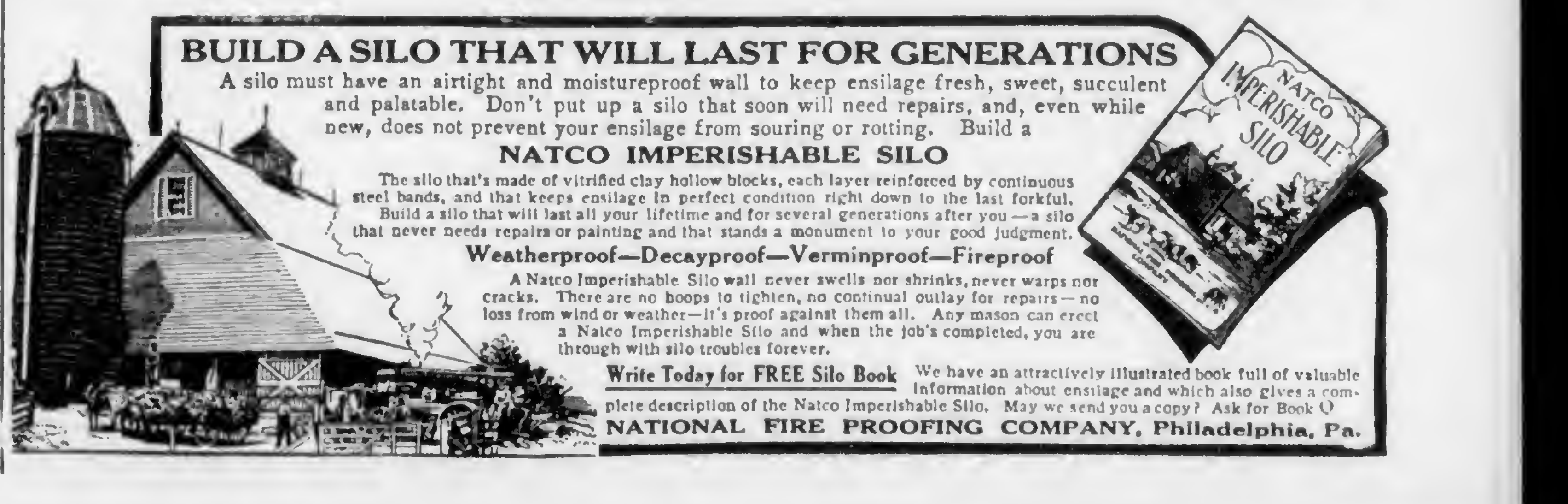

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Poultry

ROUP

During the cold season of the year farmers and poultry-men are apt to be troubled with fall colds and roup in the flocks. Even as early as October, one may find a bird, with a slight cold.

In my opinion, a common cold cannot develop into roup, unless the specific germ is present. The disease must either be on the place, or it must be introduced in some way. For this reason we always exercise great care, when buying stock never placing them with the rest of our flock before quarantining for two weeks to be sure that they are healthy and have no bad habits. We even make it a rule to quarantine our own show stock before placing them with the rest of our flock, so as to prevent the introduction of any contagious diseases, which they may have contracted during their exhibition. Such precaution pays in the end.

In the early stages of roup, the bird will show a thin liquid discharge from nostrils and mouth, frothy or running eyes, swollen head, and offensive breath. In the latter stages it has a very unsightly appearance. Later the secretion instead of remaining fluid, changes to a yellow cheese-like substance, which collects and obstructs the nasal passage, causing difficulty in breathing. The mucous finally collects around the eyes, a false membrane grows over the pupil, and later the entire eye closes up, sometimes one and sometimes both. Of course, all such affected fowls appear sick and listless. In the latter stages the comb turns pale and black and they walk unsteadily.

As already stated roup can usually be traced to some specific source. The germs may be brought from an infected territory by persons, animals, on crates, or thru some other medium of exchange that has taken place.

Roup is prevalent in flocks kept in filthy, damp, poorly-ventilated quarters. Vigorous stock in good surroundings proves quite resistant to the disease.

For the benefit of those who may be interested we recommend the following treatment.

Remove all conditions which tend to foster it; remove all affected birds as soon as discovered. Place them in a clean dry room of even temperature, and free from drafts of air. If you so desire give treatment as soon as earliest symptoms are detected. Disinfect the poultry house and runs with a five percent solution of carbolic acid and repeat this disinfection at least once a week. Feed a well-balanced ration containing some meat scraps. Burn all dead birds. Kill all birds which are past help. One good remedy consists of a few drops of kerosene oil applied to the head of affected fowls. This is also excellent for common colds. Peroxide of hydrogen and water, half and half, or creolin or carbolic acid in 2 percent solution may be used in the same manner. One remedy that as a rule gives excellent results, is a solution of 2 ounces of permanganate of potash in six pints of water. Submerge the fowl's head in it, taking care not to suffocate it. Any of these liquids will help clear the nasal and throat passages and destroy disease germs.

As a preventive dissolve two ounces of permanganate of potash in twelve quarts of water and give to all the birds to drink at least three times a week allowing no other drinking water on these days. Remember, the very best preventive is an abundance of fresh air without drafts, plenty of sunshine and sanitary surroundings and judicious care in guarding against introducing the germ.

Last winter we noticed that several of our hens had developed slight colds. We took them out of the laying house and placed two of them in a warm cellar near a hot air furnace, and two others outside in a large open front coop. In the one place it was warm and dry at all times; in the other it was cold, changing and rather uncomfortable both day and night. Our surprise came about a week later when those in the warm location commenced to get worse; those in the cold place appearing to mend. We carefully watched both sets of birds for the next few weeks. Those in the warm place commenced to get worse, and finally developed a very severe case of roup, and one of them died from this disease. In the meantime the two out in the cold fresh air house, were well on the road to recovery. We placed the one left in the warm place with the two in the cold fresh air house. From the start she appeared to gain, and in the course of a few weeks, one of the three was laying, the other was showing signs of laying, and the sick individual was almost back to normal.

From this experience we make the deduction that fresh air, sunshine and freedom from cold drafts are essentials in the cure of colds and roup in fowls. We would be gratified to have some of the readers of the Pennsylvania Farmer try this and report results.—F. W. Kazmeier, Cornell University.

REMEDY FOR COLDS IN FOWLS

What shall I do for fowls which have colds? Their trouble is not roup as there is no indication of swelling, watery eyes. A kind of hacking cough or a chirping is the principal symptom. I would like to know what to put into their drinking water to help them.—M. G. S., Arcade, N. Y.

A small amount of permanganate of potash is commonly used in the drinking water by many poultrymen for the purpose of curing and preventing colds and probably will do the birds no harm. Personally we do not use drugs on our fowls. It is better to prevent troubles of this kind than to use drugs in an attempt to cure them. If the birds are of that strong, vigorous constitution that comes with a constant effort to keep up the strength and vigor of the flock by selection and breeding and proper environment, there should be little or no trouble from disease, and if slight colds are in evidence in early autumn and winter they usually go away in a few days without any doctoring. Drugs produce an unnatural condition in the animal system and are to be avoided if possible.—J. T. Campbell, Crawford County, Pa.

The Biology of Poultry Keeping.—Maine Agricultural Experiment Station Bulletin No. 214 dealing with "The Biology of Poultry Keeping," is one which should be in the hands of every poultry keeper. It strikes at the heart of the poultry industry, at the features, which are given too little consideration by the average poultry husbandman. Such points as good stock, recognition of individuality, constitutional vigor, inbreeding, housing and feeding are given thoughtful consideration. The bulletin is mailed from Orono, Maine.

Poultry Facts.—Circular No. 40 of the Purdue Experiment Station at Lafayette, Indiana is a report of poultry conditions as the station experts have studied them and an attempt to detail some of the essentials of poultry work and to answer questions commonly arising.

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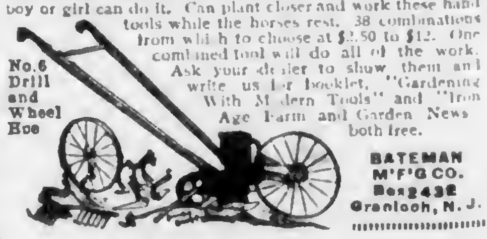

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Live Stock

FORAGE CROPS FOR GROWING PIGS

Farmers and pig growers do not always appreciate the value of green feeds and succulent pastures for their animals. Too often the hog is considered a scavenger and his ability to use waste is regarded as his chief value. However well he serves this purpose, he will pay well for good care, feed and housing.

Forage crops are especially beneficial to young growing animals. It is possible to grow them much more profitably and successfully when a good green field of palatable and nutritious pasturage is provided. Experiments and practical farmers' experiences prove that gains in weight are made at less cost on forage than in the dry lot. Brood sows can be carried thru the season on pasture at less cost than when grain fields are entirely depended upon. Foraging induces the animal to exercise and obtain fresh air, and these prevent diseases being contracted, and when the animals are put in the fattening pen their gains are unusually rapid and profitable. The green feeds eaten are of much value just to keep the pig's digestive system in good condition and the appetite keen.

The entire hog herd can be run on forage crops and will profit by this method of management. Younger animals seem to derive the most benefit, and fattening hogs the least. Herd sows and the herd boar are benefited by having green feeds. It is well to have the sow on pasture at farrowing time, as this is conducive to a strong, healthy litter of pigs. She should be kept on green forage from the time she farrows. The young pigs will soon learn to eat, the exercise and the green food in its natural state will start them along in good condition.

The method of feeding when on pasture will necessarily vary according to the kind of crop used. If the crop grown be rape, alfalfa, clover, cowpeas, soy beans, or other crops high in protein content, the grain ration need not be supplemented by feeds high in protein. If bluegrass, rye, oats, or other non-leguminous crops are grown, it is best to add a small percentage of feeds in protein to the grain. Corn or barley usually furnish the bulk of the grain ration, and when necessary these can be supplemented by adding one-tenth linseed-oil meal or one-sixteenth tankage. The rate of feeding will depend on the gains desired. Considering a full grain ration to be 4 pounds daily per 100 pounds live weight, we may say that for ordinary work with growing shoates a one-half grain ration, or 2 pounds a day for each 100 pounds live weight, will give satisfactory results. If it is desired to make faster gains a heavier grain ration can be used, and if it is desired to maintain the animals as cheaply as possible a smaller percentage should be fed.

It seems doubtful if it ever pays to try to keep pigs on forage crops alone. These crops are sometimes sufficient to keep the pigs growing, but the gains are not usually made economically. Usually the pigs are kept at a loss in live weight. Where brood sows are kept they should be given enough grain to keep them in good thrifty condition. The fact that the forage crops have high value when grains are fed does not mean that they should be fed alone.

Tho crops best adapted to grazing with pigs are alfalfa, rape, clover, bluegrass, bermuda, rye, oats, soy beans, and cowpeas. The nature of the soil, the climate, and the rainfall are influences that should govern the selection of the crops to be used. Alfalfa is the greatest forage crop on soils suited to its growth. Rape and clover are also excellent feeds, and both are high in protein, the element needed to balance ordinary grain feeds.

Farmers are urged to plan some system of forage crops for their hogs. Now is the time to plan some fields to be sown to crops adapted to grazing. If permanent pastures are available, fence off a portion for the pigs and plant some crop to keep the pigs growing when the permanent pastures dry up, and the returns from the year's work with hogs will be proportionately increased. Give the pig an honest chance to make you money by giving him green feeds in their natural state, and his growth, health, and pork-making ability, will be increased.—Dept. of Agriculture Circular.

READY FOR A WORK-OUT ON SNOW ROADS.

A BEEF FAMINE THREATENED

Fresh attention has been called to the threatened beef famine in the United States by the recent gathering of the American Meat Packers' Association in Chicago. Statistics telling strongly of the great falling off in the supply of beef cattle in all parts of this country were presented, and a powerful appeal was made to farmers to engage in the production of beef without delay. The packers were thoroly aroused as to the necessity of raising many more cattle. They looked at the matter in a selfish view as a matter of course, altho this makes not the slightest difference in the telling facts that were given to the country.

One of the packers said that six years ago there was one head of cattle for each man, woman and child in the country, but this year there is only six-tenths of one head of cattle per capita. Attention was called to the fact that unless the beef cattle supply increases materially within the coming few years, the price of beef will rise to figures that are absolutely prohibitive to most people, and porterhouse steak at $1 per pound will not be too high. Frozen meat from Australia is too poor in quality to meet with favor, and Argentine has no large surplus of beef cattle to sell us. It was pointed out that there were 56,000,000 cattle in the country six years ago, where now there are only 36,000,000, and the population has increased 16,000,000 in that time.

The recent course of the market for beef cattle has been strongly upward, and every indication is that much higher prices will be paid before the advance finally culminates. In the Chicago market, beef steers have been selling within a few days at $7.15 to $9.50, with the greater part going for $8.25 to $9.25, and the top price is highest paid since last January. Last year saw record prices, with the best steers fetching $11.25, and it is not at all unlikely that this price will be repeated this year. Stockers and feeders are joining in the upward movement of prices, as well as butchering, canning and other stock, and the best feeders are up to $8.15. Calves are extremely scarce and up to $12.10, farmers having started in to retain calves with beef blood for rearing, and it is a good sign that they are also holding back their good breeding cows and heifers.

A demand for stockers and feeders is springing up in various quarters, and in the West and Northwest, owners of thin steers are holding for finishing. Northern Iowa, Minnesota and the Dakotas are going to do a good deal of feeding the coming winter, as is Wisconsin. Roughage promises to be abundant and will be utilized largely, while a good deal of corn will be used, despite its dearness because of the short crop this year.—Wilmot W. Foote, Chicago Market Reporter.

FOR PROFIT, NOT PLEASURE

According to wrapper on my paper it does not expire until January 15, but am sending herewith stamps for 50 cents for renewal of same when due. I don't want to miss any numbers. I take two other papers but as I have said before your paper seems best suited for this section for those who are farming for profit rather than pleasure.—A. W. Wallis, Longwoods, Md.

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Philadelphia, Pa., January 24, 1914.

Forage Feeds Sometime ago we announced a series of prizes for best articles on forage crops for dairy farms. Two prize articles are published on another page of this issue. As one writer says, the growing of the richest possible forage crops adaptable to local soil and climatic conditions is a matter of business economy to the dairyman. The manufacturer usually plans on buying his raw materials, but it would be suicidal for him to buy materials in his business operations which he could produce more cheaply in his own plant. The successful dairy farmer, who secures maximum results from his herd and equipment must buy some concentrated or commercial feeds; but it is poor economy for him to buy what he can produce more cheaply on his own farm. Yet this is just what many are doing. Because of the ease with which timothy can be grown, and because of the high market prices which can be secured for the surplus which may be available for sale, this grass, which is one of the very poorest in point of dairy feeding quality, is made the basis of the forage ration. The various, rich leguminous plants, including the clovers, alfalfa, soy beans, cowpeas, etc., are a little more difficult to grow in some localities, but some of them will produce profitably in any location in the East, and will return enough more food value than timothy to pay for the extra time and work in growing them. And they have the double value of adding to the fertility of the soil while contributing to the food value of the farm forage. The problem for the dairyman is to ascertain which of these crops will yield most abundantly and profitably under his local conditions, and then bring them into his rotation. Like the Mercer County dairyman, some farmers will find some of these legumes costing more to produce, pound for pound, than some of the concentrated feeds on the market. Selection must be made upon the basis of comparative costs and values. It is a profitable field for careful study and observation. The same is true in the selection of commercial or concentrated feeds to supplement the home-grown feeds. Buy on the basis of food value rather than price. Economy in feeds, whether grown on the farm or purchased upon the market, depends upon what they will produce in dairy products, as well as upon price.

Price Cuts in Woolens Reports from the wholesale woolen goods dealers announced on January 13 that there are to be material reductions in the wholesale prices of staple serges, unfinished worsted, clays, cheviots and other woolens for the fall of 1914. The cut in price was announced as being a direct result of the new tariff schedules and the anticipated competition from abroad. Present prices on these goods are considerably below those of last fall, certain grades of serges showing a reduction of 23 percent. With the additional reduction promised for the coming season, there should be ample reason for substantial cuts in prices of clothing, the form in which consumers are interested. That such a reduction will result, however, is extremely doubtful at this time. The general opinion reported among wholesalers is that the expected benefit to consumers due to reduced prices will be lost in the course of "handling." This is the acid test of the wool tariff. The sacrifice of the wool growing industry thru the placing of wool on the free list may be justifiable if it can be shown that commensurate benefits result to the consuming public. But there is no justice in the sacrifice of an important industry for the benefit of the manufacturers, jobbers and retailers who make up the body of "handlers." The trend of prices from the wool growers to the final consumer will be watched with interest during the next twelve months. It will reveal much that is not now entirely plain in the working of our tariff system.

Maryland Agricultural College. A matter of very great importance to Maryland agriculture which must be met in the present session of the state legislature is the rebuilding of the State Agricultural College. The state now has the opportunity to put that institution upon a firm basis of absolute state ownership and control. Because of its location, in close proximity to the U. S. Department of Agriculture, and because of the diversity of rich agricultural interests of the state, this institution ought to be one of the leading agricultural colleges of the country. It needs only to be cut off from all semblance of private ownership and given a stable program of state support. A feasible plan for the latter has been developed by President Patterson, under the annual instalment plan, and if the farmers of the state will give this plan the support it deserves, they will not only put their college upon its feet, but give other states a valuable object lesson in safe and stable financing of educational institutions. President Patterson proposes an appropriation of $1,000,000, to be given to the college in five equal annual instalments of $200,000, and a yearly maintenance fund of $50,000 for the first year and increasing thereafter at the rate of $10,000 a year until it reaches the sum of $100,000. This provides for the very thing that is most lacking in the educational institutions of the East—a stated amount to care for yearly expansion and a graduated maintenance fund to provide means for best use of the growing institution. The plan is sound so far as the needs of the institution are concerned, and permits of a taxation system for support which shall levy upon the increased agricultural wealth which the college is able to produce. The legislature is now in session and the Governor has declared his position as favorable to the college and experiment station, and every Maryland farmer should rally to the support of President Patterson's program.

Shoe Prices It has become a habit with many to class only the farm-grown products among the necessities which contribute to the high cost of living. The rich, and even the so-called middle classes, make slight objections to the prices of theatre tickets, taxicab hire or wearing apparel; but they stand ready to boycott eggs, butter and meat when prices rise above the level of preceding years. Many of the theorists who are loudest in their denunciation of high prices of food products overlook the fact that practically all of the articles which farmers must buy are steadily advancing and are maintaining if not exceeding their relative position with farm produce of a few years ago. A striking example is found in the matter of shoes. The $2.50 and $3 shoes of a few years ago are gone with the 50-cent wheat and 20-cent butter. Good shoes now range from $4 up, and the end is not yet. At the National Shoe Retailers' Association meeting, which closed at New York City on January 13, it was predicted that the retail price of shoes may soon reach $10 a pair. As hides were placed on the free list a few years ago, the tariff could not be urged as the cause of the soaring prices. Instead, "pure shoe laws" were assigned as the reason. Twenty-five states in the Union now have laws requiring shoes not made entirely of leather to be stamped as "adulterated," or as made of "substitute leather," and this was urged as the cause of prices doubling and trebling in the last few years. It was asserted that if all shoes were made of all leather, 2,000,000 more hides per annum would be required in this country alone, and with hides practically in control of the larger packing houses it cannot be foreseen to what heights shoe prices may soar.

NEW JERSEY FARM NEWS

State Veterinarians Meet.—The annual meeting of the New Jersey State Veterinary Association was held at Trenton. Dr. Thomas E. Smith, of Jersey City, was elected president. In his speech of acceptance, Dr. Smith told of the work accomplished during the past year and suggested issues for the future. He cited that the ideals and ambitions of organization were not alone for personal gain, but for the general good of the stock raising industry thruout the State. Interesting papers were read and a committee was appointed that will endeavor to obtain State legislation controlling animal diseases.

Concerning Foods, Etc.—More specific legislation with respect to the sale of adulterated and imitation lard is urged by the State board of health. Members of the board also state that the cold storage act, which passed in 1911, is defective in a number of particulars, and should be amended. Warehouse men should be required to submit reports of the goods held in storage monthly instead of quarterly, as not sufficient information is secured regarding the amount and kinds of goods which are held in storage from the quarterly report. The law should also be changed as to require the marking of foods with the date they are released from storage, as well as the date of entrance into storage, and there should be further provision requiring that all goods which have been in cold storage be so marked when offered for sale.

Meat Inspection.—There is no system of meat inspection in force in this state and large numbers of animals are slaughtered annually, a considerable proportion of which are diseased and which receive no attention whatever. This is a condition which should not exist and legislative action is required which will result in some method of supervising the slaughtering of animals for food. It is also recommended that legislation be enacted to prevent the use of coloring materials and preservatives in meat and meat products, and to define the terms "blend", "mixture" and "compound." At present much confusion exists as to the exact meaning of the words.

Tire Tax.—The farmers of this state are opposed almost to a man to the recommendation of State Road Commissioner Stevens, that all wagons pay a tire tax to the State. They are also unanimously opposed to automobile reciprocity, knowing as they do how foreign cars tear up the roads. Many organizations of farmers have already gone on record as favoring the repeal of this feature of the automobile law and against any proposition which would impose a tire tax; or a tax on the wagons of a farmer, aside from automobiles. This tax would certainly be wrong, for on the average a farmer has something like fifteen wagons, counting his farming implements. To tax them for road driving would be double taxation, hence manifestly unfair, for such vehicles do not tear up nor wear down the roads.

School Laws Again.—The farmers are now preparing to wage the fight in the Legislature for more complete control of the moneys raised and spent by them for public schools. The farmers are opposed to some of the methods of the State board of education, whereby schoolhouses are condemned, forcing the erection of new ones, with consequent boosting of tax rates, and the abandoning of some district schoolhouses, and the consequent grouping of children for daily transportation. Because of this approaching fight in the Legislature arising from planks in both the Democratic and Republican State platforms, which would curb the power of the State school board over condemnation of school buildings unless a majority of taxpayers agree on the proposition, there is much interest in educational movements just now in the rural counties.

The Question of Farm Surveys.—At the annual meeting of the Mercer County Farm Bureau, the question of farm surveys was presented by Prof. L. A. Clinton, one of the experts of the national government. This question of farm surveys is one which, in the last few years, has received a great deal of attention. Survey bulletins have been issued by some of the State experiment stations, notably New York, and by the U. S. Department of Agriculture. These surveys, wherever taken, have shown that there are four factors in profitable farming. The first factor is the size of business. No farmer can hope to make a net labor income of over $1,000 and up, exclusive of the interest on his investment unless he conducts a total business which is in amount above the average. There is not enough room for profit in a small amount of business. The second factor is diversity of business. The most successful farmers have several important sources of income. This not only puts eggs in several baskets but helps an equal distribution of labor thruout the year. The third factor is the quality of animals kept on the farm, and the receipts per cow on dairy farms. Poor cows are keeping farmers poor. As one farm survey puts it a farmer must get from his cows one and one-half times more than the average labor income of about $1,200 a year. The fourth important factor is the crop yield. It pays to grow good crops, but most surveys have developed this as the least important factor of the four. These factors have been likened to the links in a chain, the weight supported by the chain, the labor income. The chain is no stronger than its weakest link. Four-fifths of the farms in these surveys are below the average in one or more of these four factors. Most farm systems have links that need strengthening. If a farm business is as good as the average in all of these factors the labor income will be above the average.

State Experiment Station.—While much of the work at the State experiment station has been retarded, particularly in animal husbandry, because of the fire that destroyed the barns last July, much has been accomplished during the past year in other branches of agricultural experiment work. The income during the fiscal year that ended October 31, was as follows: State appropriation, $94,041.96; United States appropriation, under the Hatch act, $15,000, under the Adams act, $15,000; receipts from the sale of farm produce, $673.89; total, $124,715.85. An itemized list of expenditures has not been made public. This statement is a pretty good answer to those who have been clamoring for more money for the agricultural interest of the state. This year the College, Station and Board of Agriculture are to get over $230,000 from the State as well as the $30,000 from the national government. Work at the Station included studies in soil chemistry, bacteriology, plant breeding, peach breeding, poultry husbandry, oyster

propagation and studies on methods for the extermination of pests, such as the plum curculio and root maggots. Apiary instruction work was organized as provided by state law. Six bulletins, setting forth the results of some of the more important investigations, were published and distributed. Director Lipman states that the affairs of the Station are generally in a good condition and an effort to strengthen the work and to enlarge its scope is in evidence. The State appropriation for building will give the Station as well as the College much better facilities.

State College Notes.—The students in the junior class at the State college made a two-day visit to the National Poultry Show which was recently held at Madison Square Garden, New York City. Every opportunity was given by the officials of the show to make a thoro study of the various breeds of birds. The senior agricultural students made a trip thru the State colleges and universities of the Middle West during the Christmas vacation. A study was made of the equipment, apparatus and methods of teaching at each of the institutions. Special lectures and demonstrations were given for the benefit of the visitors. Those who made the trip say Western colleges are ahead of the East in farming methods but not in fruit growing or poultry raising.

After Heavy Autos—State Motor Vehicle Commissioner Lippincott has prepared a bill which will be introduced in the Legislature early in the session. This act will empower the commissioner to license auto busses and motor freight busses, but will expressly provide that he shall license no machine which in his judgment would be unduly injurious to the roads or dangerous to other traffic. License fees will be increased and the funds so collected shall return to the counties for the repair of roads on a per mileage basis, in accordance with the mileage traveled within the boundary of the county.

Dairy Inspections.—The bureau of creameries and dairies made 585 inspections last month. The production of milk was prohibited in three dairies and the dairymen were ordered to appear before the board to show why they should not be closed because of failure to meet requirements. Eighteen dairymen were notified to improve their methods within a specified time.

The Burlington County Exchange.—The Burlington County Farmers' Exchange during the year just closed marketed 252,325 bushels of potatoes amounting to $142,441.46; 44,394 packages of farm truck at $59,880.34; and 6,380 crates of fruit, amounting to $18,438.85. The total receipts for the year were $276,347.87, and expenditures were $253,410.14, leaving a gross profit of $22,937.73. The Exchange has a membership of 867.

Freight Rates and Living Cost.—In an address during the recent Farmers' Week at the State College, George D. Ogden, general freight agent of the Pennsylvania Railroad, produced figures designed to show the average freight charge which is paid on the portions of food sufficient for one meal for a family of five persons. He estimated that on a large and varied meal, for five persons, the raw material for which would cost approximately $2.00, the freight charge would amount to about eight cents. He also stated that one cent would pay the freight respectively upon enough apples for eight meals, enough beef for one meal, enough cabbage for four meals, milk for two meals, onions for 1 1-3 meals, oysters for three, potatoes for two meals, canned tomatoes for three meals, fresh tomatoes for two meals and turnips for 14 meals, all for a family of five persons. This estimate may be all right, but when a crate of tomatoes sells for 50 cents, and there are 10 cents deducted for freight, 5 for cartage and 5 for commission, there remains but 30 cents for the farmers. The plants to produce that crate cost another 5 cents. If the crate, worth 15 cents be lost or destroyed, the grower has just 10 cents left for the use of land, fertilizers and labor. Also, if it is worth 5 cents to cart a crate of tomatoes in the city, why not in the country where the haul is more often longer? In that case, 5 cents will have to cover the entire cost of production. Still the railroads, commission men and retailer will tell you that the farmer who can produce 1,000 crates of tomatoes to the acre and sell them for 50 cents a crate is getting rich fast. Well, if 1,000 crates net 5 cents a crate, that's $50 an acre. It will take that much stable manure, fertilizer and nitrate of soda to produce the 1,000 crates. What have we farmers left for the land and our labor? Leaving us and the railroads out, it is no wonder that the municipal market in Newark showed a net profit in 1913 of $23,390.74 out of total receipts of $59,722.67.—D. T. Hendrickson.

NEW YORK LETTER

Conservation Commission.—The annual report of the conservation commission has just been submitted to the legislature. The total receipts of the department for the fiscal year were $316,407.87 as against $256,002.84 for the previous year. Hunters' licenses contributed largely to the increase, these amounting to $161,490. It is believed that this item will reach $200,000 next year. The revenue of the fish hatcheries and state game farm amounted to over $300,000. Add to this the departmental revenues turned into state treasury during the same fiscal year which were $316,407.87 and we have a total, indirect revenue or its equivalent, of $617,007.87. The total appropriations for this department were $658,126.66. Total expenditures for the fiscal year were $744,103.

State Agricultural Society.—The state agricultural society is holding its annual meeting this week at Albany in connection with the state department of agriculture. Important reports will be presented by committees appointed a year ago. Agricultural Credits will be discussed by R. B. Van Cortlandt of New York; an eastern Produce Exchange will be described by Seth Bush of Morton; Ezra Tuttle, of Eastport, will tell about the co-operative work of the state grange; Mrs. Julian Heath discusses Housewives' problems; Hon. Marc W. Cole describes the work of the State Bureau of Co-operation; Hon. J. N. Carlisle tells about the kind of roads the farmer needs; Prof. Tuck gives an account of the agriculture of the far East; County Farm Bureaus are explained by M. C. Burritt, head of the Farm Bureau Department of the State; Dr. Finnegan of the Educational Department tells what should be done to improve our rural schools; Dean Cook agrues for a unification of our agricultural forces and the final session will be addressed by Gov. Glynn, Commissioner Huson and Chancellor Day.

Gov. Glynn and The Farmers.—Gov. Glynn has had in consultation this week several prominent agriculturists and they have gone over two or three important agricultural question with reference to some new legislation particularly with reference to farm credits. One of the things proposed is to establish a land bank with which shall be co-ordinated about 250 savings and loan associations for the administration of the functions of the proposed system. The land bank is intended to be a sort of clearing house for mortgages on farms. It is also proposed to create a market commission which shall act as an agent between producer and consumer. The matter of amending the commission merchants' law so as to allow the Commissioner of Agriculture the right to examine the books of commission men was also considered.

High Priced Holstein.—At the sale of Holsteins this week at Syracuse a young bull, Spring Farm Pontine Cornucopia, brought $15,000 and a six weeks' old bull calf $2,025, while a six weeks' old heifer calf sold for $900.

Farmers' Week At Canton.—This will be from January 26 to 31, and the sessions will be held at the school of agriculture. January 27 will be devoted to the interest of the Holstein breeders of the northern section of the state, Wednesday, January 28 will be in charge of the corn growers, January 29 will be devoted to the Farm Bureau and it is also Womans' day. January 30 is for the Press, the development league and business men.

Dairymans' League.—A branch of the Dairymans' League has been organized at Cooperstown with Geo. H. More, president; Howard Clark, secretary and J. E. Shepherd, treasurer.

Grange Co-operation.—There are 20 granges in Jefferson County that are identified with the Patrons' co-operative Association. Considerable money has been saved the past year to members of the association by buying supplies for the farm together. The president of the association is O. E. Hinds, of Watertown and B. A. Field, of the same city, is secretary.

Farmers' Week At Morrisville.—The fourth annual Farmers' Week exercises are in progress this week at Morrisville at the State College of Agriculture. The session closed Friday with the annual trophy debate by students of the college.

Money Wanted.—The several Farm Bureaus of the state are interested in securing another appropriation of $25,000 from the state this winter for Farm Bureau work. This amount was appropriated last year but some of it went to the establishment of a new department at Albany and for other purposes.—D.

MARYLAND NOTES

Gunpowder Club Meeting.—At the last meeting of Junior Gunpowder Agricultural Club at the home of Mr. Granville Mathews, Baltimore Co., many topics of interest were discussed. Mr. Mathews, who raises alfalfa, corn and hay for market, claims that blue grass which came up thick in his alfalfa, in combination with the alfalfa makes a splendid stock feed, cows being particularly fond of it. Mr. Mathews feeds a number of steers every winter which he declares is a most convenient way to market the crops grown on the farm, and also serves as a most excellent plan to maintain soil fertility. Discussing the best ration for young pigs in conjunction with skim-milk it was the opinion of members that ground corn was best as the pigs do not properly digest the whole corn. A member, who has been experimenting, said he preferred wheat and corn ground together, as too much corn often causes trouble, indigestion and loose bowels.

Harford County Organizations.—The Upper Cross Roads Farmers' Club recently met at Mr. H. Ashton's farm and a full attendance of members was recorded. The inspection committee among the many products specified, reported 500 bushels of potatoes, and a new orchard of 130 trees, and a new garage. The last named is evidence that the Harford farmers are "getting there" in good style.

At the last meeing of Fallston Farmers' Club at the home of Mr. James O. Watson, which is one of the oldest farm homes in the county, the house having been built in 1794, the members seemed to be more interested in the wainscotting and pannelling of the colonial architecture than anything else. The inspection, however, made a good report of the farm and crops. Mr. Watson follows a system of selling cream and feeding the milk to his stock. Members advised lessening acreage and doing more intensive farming. Mrs. Charles S. Ramply, of Long Green, is the champion turkey raiser of the county. From two hens last year she raised 71, and received for 69 of them $242. The largest one dressed 21½ pounds for which she received $6.88. Quite a nice lot of pin "money" to realize on the farm about holiday time. If one woman can do it, others also can.

Kent County Interests.—Over 100 farmers and owners of traction engines fron Kent, Queen Annes and Talbot counties recently met at Chestertown and organized a protection association. Resolutions were passed protesting against the present State Road laws which prohibit traction engines from using state roads. This law the past season caused many farmers great inconveniences in getting grain threshed, and now many have sold their corn and cannot get it shelled. The large cowbarns of H. H. Pearson, Rich Neck Manor were recently destroyed by fire. Mr. Pearson was formerly of Philadelphia, and bought the celebrated farm from General Seth with no previous experience. Mr. Pearson studied farming and today his farms are not only among the cleanest and more thoroly tilled, but the crop yields equal any in the state.

Tobacco Situation.—The tobacco growers of Southern Maryland fear that owing to the faulty packing of their products before sending to Baltimore market, and the alleged inefficient manner in which it is inspected, that the tobacco trade of Germany, Holland and France which they have profitably enjoyed for many years will be lost. The growers declare the inspectors are politicians who have little knowledge about tobacco.

COUNTY NOTES

Clinton Co., N. Y., (N.E.) January 5.—Weather fine. Sleighing and cold and dry. At recent auctions cows not selling as well as expected. Veals, 9c live for good ones. Horses not in demand and almost a drug. Much plowing done during the late fall and all work in good shape. Some filling ice houses.—Henry E. Gilbert.

Carbon Co., Pa., (E.C.) January 5.—Weather unusually mild during December. Snow fell day after Christmas, making good sleighing ever since. Potatoes were an average crop, and are now wholesaling at 80c delivered, with quite a few growers holding for higher prices. Owing to the open weather, which continued up to Christmas day, more plowing has been done than for many years previous.—Brice Brenckman.

Morris Co., N. J., (N.) January 7.—Weather clear. Snow on ground. Poor sleighing. Cattle, horses and hogs are wintering well on account of mild weather. Winter wheat and rye are looking fine. Good farm work horses are scarce and high. Butter 35c; eggs 40c. Very little work being done now on account of snow. Taking care of stock and hauling summer supply of fire wood is the main occupation.—Geo. F. Williamson.

LEGAL DEPARTMENT

Thru this department Pennsylvania Farmer will discuss general legal queries submitted to it by its readers. Questions involving unusual circumstances and of purely local or special nature can not be handled. This department is open to the free use of readers.

Road Taxes—Wide Tire Wagons.—Will you kindly give the provisions of the Pennsylvania Road Law regulating the use of wide tire wagons? Is there a percentage of taxes deducted for the use of wagons on the road having tires of four inches wide or wider? J. E., Mendville, Pa.—A person who uses exclusively, in hauling loads of two thousand pounds weight and over, draft wagons with tires not less than four inches in width, is entitled to a deduction of one-fourth of his road tax for the succeeding year. To obtain this deduction such persons must subscribe to an affidavit stating that he has used such wagons. The oath to this affidavit may be administered by the supervisor of roads and should be filed with him. A person who uses only draft wagons equipped with four inch tires in hauling loads of two thousand pounds or more is entitled to this rebate tho he uses wagons having narrower tires to haul less loads. Any person who uses wagons having tires less than four inches in width in hauling loads of ten thousand pounds weight and upwards is liable to a fine of five dollars for each offense.—G. G. and H.

Intestate Law—Widow's Interest.—A inherits real estate, marries B and dies, leaving no children and no will. A and B have purchased real estate. What are B's rights?—Subscriber, Bucks County.—Where a man dies without making a will, leaving a widow but no children, the widow is entitled to one-half of the real estate for her life. If the statement that A and B had purchased other real estate means that the title was taken by A and B jointly then the husband and wife became tenants by entirety and the widow, upon surviving her husband, becomes entitled to the said real estate absolutely. If, however, the real estate was conveyed to the husband alone, the widow will only have the one-half dower interest. In addition to the aforesaid dower interest, the widow may claim five thousand dollars absolutely, which she may elect to take out of the remaining real estate, or out of the personal property. If this is an actual state of affairs, it would be advisable to consult an attorney in order to protect the interest of the widow.—G. G.

Water Rights—Drainage.—A and B own adjoining farms. Can B compel A to build a ditch to prevent water from his farm running into a ditch on B's farm? Chester County Reader.—The owner of lower land cannot prevent the natural flow of water upon his land from higher adjoining land. If A's farm drains naturally into B's ditch, B cannot compel A to build a ditch to divert the natural flow.—G. G. and H.

Roof of Quality.—A catalog of unusual value to anyone contemplating the purchase of roofing material, either for a new building or re-roofing an old building is issued by The Dickelman Mfg. Co., Dept. 40, Forest, O. It describes and illustrates the many special features of the famous Dickelman Extra Open Hearth Galvanized Roofing. The catalog will be sent free upon request to the above address.

Your Bargain Book.—The Charles William Stores new 1,100-page, money-saving catalog is a revelation in high-grade merchandise at surprisingly low figures. It lists everything for the family, home and farm, which is sold on a straight prepaid guarantee basis. The catalog will be sent free to any of our readers who will send a postal card request to The Charles William Stores, 1015 Stores Building, 115 East 23rd St., New York City.

How to Get Better Roads.

Earth Roads Improved by Use of King Drag.

By Dr. DONALD McCASKEY.

Keeping The Roadside Gutters Open

Everything is easier and better if always done right and at once. This can never apply more emphatically than in the maintenance of drainage ditches of township roadways. If you want to keep the road which runs by your own farm or close to your own house in good condition you must keep the water out of the middle of the road; keep it where it belongs, in the side gutters. Get out with your plow and start a good deep furrow close to the fence. Run this furrow along the road, parallel to what ought to be the road crown. The best time to do this is in the fall. The sod will rot during the winter, and if the furrow is thrown up against the bank, the road's drainage ditches will be able to handle a good deal of water which formerly ran down the middle of the road.

But the plow is not enough. The road grader and the road drag have a very necessary place in opening up a drainage ditch. Suppose you wanted to compel the waste water to run off the road's center and run into the side ditches, but because of neglect there are no properly opened ditches on the sides of the road. First plow, then follow up with the road grader. Sink the blade in deeply, cutting away at least one foot of clogged side ditch. This loose earth should not be pulled out in the middle of the road at one time. It should rather be dragged out with the use of the road drag over a period of several draggings. I am speaking, of course, of open weather work. It is not necessary or advisable to always wait until spring. You can get on the road at anytime during the year when the ground is soft.

In operating the blade of the grader, drive the cutting point down deep the first round. During the second round the edge of the blade can be put down only a few inches. This will shave off a big slice of the earth at the berm. This slice belongs in the center of the road instead of at its berm, or that section of the road at the junction of the side gutters and the road foundation proper. This must always be a few inches lower than the high point of the crown at the centre of the roadway. Four of five rounds with the road grader will do a lot of good work. Every other round the point should be sunk in deeper. Every alternate round the cutting edge of the blade should be put down a little more to shave some more off the berm.

Of course the man who operates the scraper blade will have many varieties of conditions to contend with. He may strike solid rock, which blocks the side gutters. The old custom was to merely lift the blade of the scraper and pass this blockade by. This is not good business. Whenever a side ditch is blockaded, the rock must be blasted out. It is impossible to make a road grader do its best work if rocks are permitted to remain. The function of a road grader is to open up the water courses. When a little dynamite is needed to supplement the cutting steel of the grader blade, the dynamite should be promptly and freely used.

When the grader has made four or five rounds, the drag can often be put to work to level out the earth pulled up and shaved down by the grader. There is no hard and fast rule to govern this procedure. The main idea is to have the slope of the road not less than one-half a foot in its drop from the height of its center. Engineers will have varying figures. Oftentimes roads need different slopes but be sure that you have at least six inches of drop from the crown to sluiceway. Then water will not attempt to run up hill. The water readily runs into the side ditches if it is given half a chance.

Of course there are all types of road graders. Every dealer will tell you that his particular grader is the best. Many inducements will be offered to township officials to buy a particular kind. For instance, in one township I know of the three officials of the township took a trip to Indiana in search of a road grader as guests of the company. Whether they got the best grader or not will depend in great measure upon the intelligence of the man who operates the blade. The average grader is big and clumsy and cannot be turned in a short space and usually requires a team of six horses. If it is to be used in mid-summer, as in May or July, or during the fall, I have found that traction engine power works better than horse power. The traction engine can pull more steadily and you can procure a more even degree of cutting in your work. Personally I much prefer traction power to horses.

Another menace to maintaining a clear open waterway is grass. Weeds and brush need to be attended to regularly. These are removed in grading and the constant dragging during the later months of the spring and summer will usually prevent grass, weeds or brush interfering. During the summer months, when the grass along the fences grows high it should be cut and removed or burned and not be permitted to obstruct the ditches. If it is left where cut a goodly amount of dust mixes with it and the mass serves to act as an obstruction to the road's drainage. There is a law on the statute books I have been told (among the mass of odd and mixed up road laws of Pennsylvania) which says that the width of a road extends from fence to fence. If this is the case, any farmer who would deliberately fill the water courses with obstructive waste would be legally liable to prosecution. But I do not think this is the efficient way to solve this problem. The quickest way is to have road patrolmen placed in charge of specified road sections. It is then the business of these men to keep their water courses open, to keep down all the grass, weeds and brush along the wayside, and to maintain a wide-open and clean condition of the side gutters all the year round.

There is a light handy grader for use in cleaning out side ditches. It cannot do the same work as the heavier grading machine but in its sphere it does wonderful work. All are good if properly used. The trouble is that they are usually brought out only once a year after corn planting, when it best suits the farmers to "work the roads," whereas were the road's side ditches opened up nicely all the year round, using the pick, shovel, dynamite, the grader and the road drag patrol, our local highways would spell boulevards instead of mud holes and ruts.

It would be a fine plan to interest and instruct the school children of each township by giving practical lessons in earth road making and maintenance. It would certainly be more practical to teach modern road making than the history of the much lauded Roman roads. There is too much dead stuff in our school curriculums as it is. Why not inject a little life which will reflect itself in township affairs by starting with the children in road making. There is no reason why a practical course of instruction in keeping a road's side ditches open and the road in repair should not be considered "study" and "education" and schooling, just the same as the prescribed text book studies. Schooling does not consist in mere book study. Just here is an opportunity for the State Highway Department. It should have regular schools in every county to which our public road officials and others could go for practical demonstrations. Such a practical plan would arouse interest in the road problems and greater attention to road maintenance. Our townships need more than money to get roads adequately built. They need to have every one of their farmers and farmers' wives, their township ministers and doctors and the school children themselves to understand the general principles of road building and maintenance.

I am a strong believer in having the township road officials take the public into their confidence when it comes to treating road problems. Likewise the public should keep in touch with the road officials, and when they fail to act, our township citizens should go ahead and fix things themselves, keeping of course within the spirit and the provisions of the law. This is the quickest and most effective method; it is likewise the simplest and cheapest medicine to apply to road diseases. In a recent issue of a Philadelphia daily there appeared a rather caustic stricture on the good common sense of the farmers of Pennsylvania. The article was written by the Automobile Editor. He said: "The tide of good roads enthusiasm is constantly rising, despite the fact that the people of this state at the last election defeated a measure aimed at the time of its origin to improve the roads for the benefit of the citizens of the Commonwealth. The farmers of Pennsylvania defeated this bill."

I wondered as I read whether the Editor realized that our state assembly had deliberately failed to pay the farmers who defeated the road loan its legal obligations in road appropriations. I wondered what he would have thought of his paper if he had contracted to do a certain piece of work for it as Automobile Editor and then had the paper fail to make good on its end of the obligation after he had lived up to his part of the contract. Wouldn't he have "jacked" the job? Wouldn't he have lost his respect for the promises of his paper's management? There has been no public action of the Pennsylvania farmers more significant of their better organization than this defeat by a 41,000 majority of the $50,000,000. road loan.

In the great meeting of the American Road Builders' Convention which lasted a week, recently, in Philadelphia, the majority of the discussions and highly scientific papers dealt with the higher priced, ultra-scientific roadways. This type of road is very necessary. The study of road materials is also very essential. But, among all those speakers at the four-day convention, the one whose message carried farthest to the American people as a whole was that of "Old Shack," commonly known as "The Knight of the Dirt Road." He was Congressman D. W. Shackleford, of Missouri, who declared for "plain roads for plain people." Mr. Shackleford has the right idea when he says: "Build the local roads first, then if we have any money, we'll fix the boulevards.' The local roads belong to the everyday farmers comprising our township population. It is perfectly safe to place the problem of proper drainage under the responsible care of the local farmers if the proper system of patrol, inspection and pay is inaugurated. Then, and not until then, will there be a universal state-wide attention given to the essential subject of building, draining and maintaining the country earth roads.

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Recognizing the fact that the modern farmer is as much of a *business man* as the merchant of the big commercial center, we call the former's attention to the *established truth* that the Mitchell car is an *investment* and in *no sense a speculation*. Not only is the car manufactured to last but its maintenance is economical—a fact that any man of business sense will thoroughly appreciate.

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PRACTICAL RURAL CREDITS

The question of rural credits, or as it really means, the easy and convenient method of borrowing money by the farmers, is certainly receiving its full measure of attention just now. I sometimes wonder if the proposed changes do not merely propose another way of grabbing money, honestly made from the quiet pursuit of agricultural labors, taking it to the centers of mysterious financial operations, and then sending it back to the country for discounting purposes, loaded down with a half-dozen "middle-men's" profits.

As a general rule, we farmers of the East can always go to our bank and easily borrow money sufficient for our needs at as low a rate of interest as any other business man. The one distressing fault seems to be that these are short-time loans, and must be repaid or renewed at maturity, the latter being nothing more than the payment of interest and a little bother. It must be our brethern in the South and West who are looking for some form of relief. They have large tracts of land to develop, which requires machinery of all descriptions, and also necessitates the purchase of quantities of chemical fertilizing elements. All this requires much money, more than can be easily repaid in a year or two, hence the necessity of the national government providing means whereby some kind of credit may be given. The least of these should be the depositing of government money in country banks, furnishing the same sort of security as has been furnished for years by those philanthropical institutions in Wall street. Why not? Are failures more frequent in the country than they are in the city of Bulls and Bears?

Joseph W. Roper, of East Orange, N. J., has developed a theory which he expounded recently in an address before the Essex Civic League. He said in part: "In recent years the cost of developing farms, including the expensive machinery and equipment for transportation, has been so great that none but capitalists can undertake the task. This is the reason that farm after farm lies a barren waste today thruout our country, with houses and implements going to ruin while our food prices keep going up. Give the farmer a chance like the merchant and you will find that food prices will go down as a natural result of competition. The chance the farmer needs is the power to borrow until his land is on a paying basis. To accomplish this the best plan, in my opinion, is the farm mortgage 4 percent bond, issuable by the state on a 60 percent. valuation of the farms and sold broadcast."

This seems to me to be "just another theory." Our farmers do not wish a "Credit Mobilier." They are not attempting to float a South Sea Island scheme, neither are they building castles in the air. It is true that the theories of many of the so-called farm philosophers may have caused the farmers' dreams to become Utopian, but after all the farmer knows pretty nearly what he wants, and he is going after it until he gets it. He will not be misled by such schemes which try to make him believe that he will soon acquire so much land that congress will have to pass a law limiting the number of acres any one man may own. If we ever have such a law, it will be to dissipate such conditions as prevail in England, and not to limit the size of the farm of the "Man with the Hoe."

After reading much and hearing a whole lot more about the "rural credit system," it is really refreshing to know of some one place where the people themselves are making a success of a similar idea. We American farmers have already learned much from those who emigrate hither from overseas, but nothing has been brought home closer to my mind than the manner in which financial aid is extended to Jewish farmers by organizations composed of those of their own race.

Since the opening of last year five co-operative credit unions have been organized by Jewish farmers in New Jersey alone, for the purpose of loaning small sums of money at reasonable rates to such of their own number as may need it. One is located at Carmel, Cumberland county, with 36 members; another at Flemington, Hunterdon County, with 22 members; a third at Hightstown, Mercer County, with 32 members; a fourth at Perrineville, Monmouth County, with 29 members, and the fifth at Woodbine, Cape May County, with 28 members.

In addition, the Jewish organization which is back of the co-operative credit system maintains 10 young men in attendance at the short course in agriculture at the State College, paying $90 a year each for their maintenance and tuition. And still further, a Jewish employment bureau has placed 154 men upon farms in New Jersey, some of them as skilled men making from $35 to $50 per month and board and lodging while others are doing ordinary farm work at the average of farm wages thruout the state. The most of these men are employed by non-Jewish farmers.

Two systems for giving financial aid to Jewish farmers—the land credit system and the co-operative credit system—have been in successful operation in New Jersey and the nation at large for a number of years. The first was established in 1890 thru the agency of the Baron de Hirsch foundation. It made loans to Jewish farmers from its inception. By 1900 this particular phase of the foundation's work had so increased that the Jewish Agricultural and Industrial Aid society was incorporated to look after the agricultural end of the fund's work. In fourteen years this society has granted 2,800 loans aggregating about $1,800,000, to 2,500 Jewish farmers in thirty-one states and Canada. The rate of interest is 4 percent. These loans are secured by mortgages, are repayable by amortization in graduated annual payments and some $800,000 has been thus repaid.

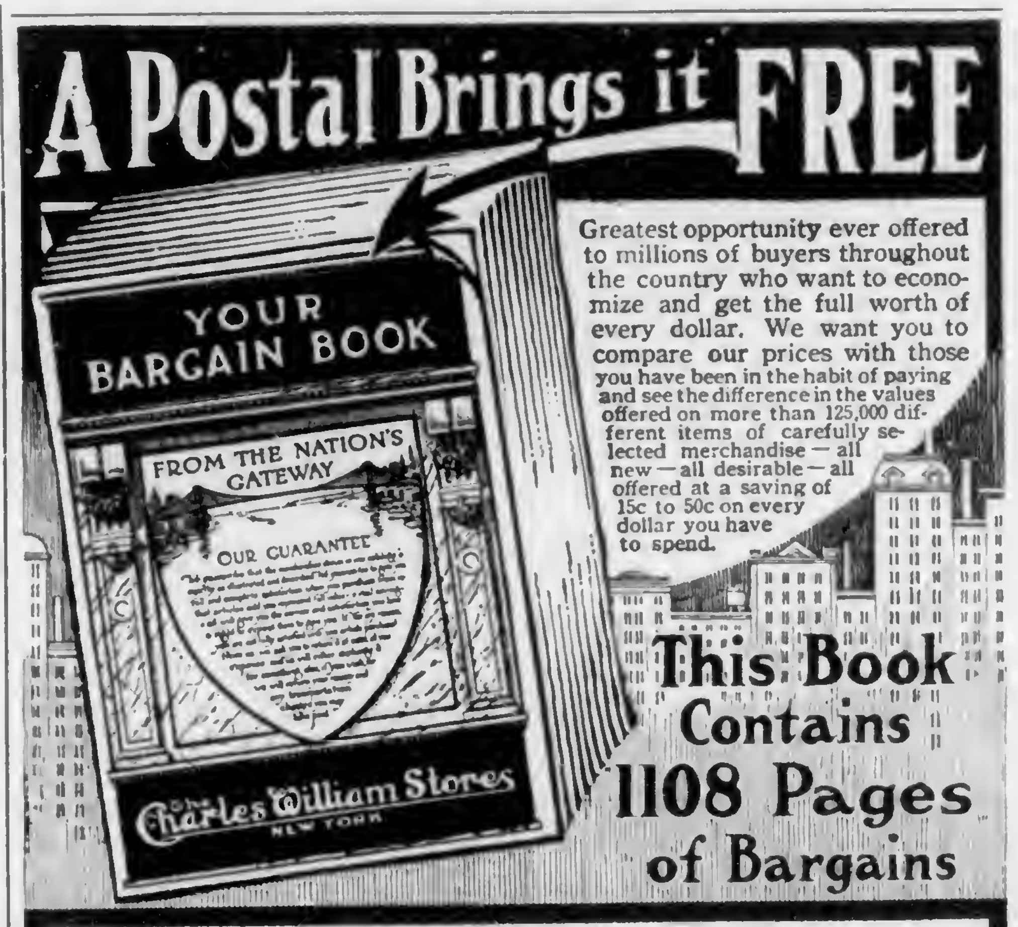
In addition to the above aid society, co-operative credit unions have been organized somewhat on the Raiffeisen bank plan of Europe, for the purpose of making small loans for a short time, at reasonable interest, to buy stock, seed, fertilizer or farm implements. A number of Jewish farmers get together and form a union. Each subscribes to one or more shares at $5 a share and pays from 60 cents to $1.80 a year dues. When $500 is thus subscribed and paid in, the Jewish Agricultural and Industrial Aid Society loans the union $1,000 at 2 percent to begin operations, the money being supplied by the Baron de Hirsch Foundation and by the Jewish Colonization Society of Paris. Any member of the union may then borrow from the union to the extent of $100, for not longer than six months, at 6 percent upon giving his personal note with two other members as security.

It is claimed that the co-operative credit associations established in New Jersey and 30 other states, to aid Jewish farmers, are the pioneers of such organizations in this country, and that their successful operation, without the aid of special legislation, proves the adaptibility and benefits of the credit system in general use in Europe to the farmers and agricultural interests of the United States. It has been suggested that the Grange might form some such association to aid its members, but that organization has not thus far seen fit to adopt any such plan.—D. T. Hendrickson.

NEW JERSEY GRANGE NOTES

New Jersey granges are noted for selecting for their officers solid substantial farmers and their wives and daughters,—the kind that will give inspiration to any kind of an organization. Among such officials, who have just been installed are: Grand View Grange, of Flemington, Master, James J. Higgins; secretary, William Y. Holt. Stillwater Grange No. 177 ,has chosen John W. Earl, for master, and William C. Earl for secretary. B. B. Hill is the new master of Swartswood Grange, and A. W. Huff, secretary. George L. DuBois is the new master of Monmouth Grange at Freehold and George W. Blatchley, Jr., secretary. Edward L. Otterson has just been installed master of the grange at Allentown. Carl Ayres is secretary. James McKnight has been elected master of the grange which has just been organzied at Clarksburg. John Ely is secretary. Titusville Grange, which is in a flourishing condition, having 100 members, has chosen William H. Blackwell as master, and J. Hart Smith as secretary. Charles L. Sullivan has been installed as master of Mercer Grange of Hopewell, and J. H. Dalrymple as secretary. John Lownes is now master of Newtown Grange and Miss Edna Watson is secretary.

Shrewsbury Grange, of Red Bank held a Christmas tree sociable. Each member bought an article valued at ten cents and these things were distributed as gifts to the grange members. A lot of fun resulted from this promiscuous giving. There was a large Christmas tree upon which the gifts were placed. A number of songs and recitations were given, after which refreshments of fruit, candy, cake and ice cream were served. Farmingdale Grange has just celebrated its eighth birthday. Over 100 visitors were entertained, every grange in Monmouth County being represented. Several fine addresses were made.—D. T. H.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Facts About Foods---I.

By Mrs. C. W. FOULK.

Food Classes and Uses

The up-to-date farmer knows that a properly fed horse can pull a heavy load easier than the poorly fed animal. The dairyman knows that by proper feeding and care the butter producing ability of a cow can be greatly increased. The stockman has learned what foods best fatten baby-beeves. But how few housekeepers know that by proper feeding the family can be made more efficient workers with both hands and brain.

The study of domestic science is not the cooking and preparation of dainty and elaborate dishes, and when a school offers no more than this it has become a mere cooking school. A course of domestic science, among other things, means a study of foods, of man's digestive system, and the discovery of what foods to use under varying conditions to obtain the best results. The man working in the fields needs an entirely different diet from the man sitting all day at an office desk. The wise farmer first decides whether a calf is to be fattened for the butchers' block or whether it is to be kept for dairy purposes, and then so feeds the animal as to get it as soon as possible up to the standard; the wise housekeeper will so feed her family that each member will be best adapted to the work in which he is engaged. In short, the housekeeper as well as the farmer must carefully study ''balanced rations.''

GOOD TYPE OF ROASTER.

What Constitutes Good Feeding.—Incidentally cooking does form a part of any domestic science instruction, but it must be kept in mind that the preparation of foods is but a means to an end, that end being the balanced ration. Most women feel that the family has been well fed where the appetites have been satisfied. But one may have had all the food one could possibly eat, and it may have been the kind one most likes, and still one's body be improperly nourished. Domestic science should not teach how to prepare more and more elaborate concoctions, but it should teach simplicity in both the number and kind of food. There is a mistaken idea that the house keeper who is trained in domestic science feeds her family on elaborate salads, purees, souffles and frappes and other high sounding dishes. On the contrary the table of the trained woman will have less elaborate but more wholesome food. It will be the food containing the proper proportions of the different kinds of food materials to best supply the needs of the family, and these foods will be prepared in a manner that will be the least wasteful and the most digestible. In the diet of the family as well as in household decoration the trained woman will always keep in mind simplicity and usefulness.

In order to better understand the effects of diet upon different individuals, it is necessary to first understand what the foods contain and their use in the body, and it is the purpose of these talks to discuss some of the every-day foods, how to prepare them and when to use them.

When a physician is called, the first thing he usually does is to take the temperature of the patient. The normal temperature of the body is 98.5 degrees F.; anything above this is fever, and anything below shows a state of collapse. This body heat is produced by the oxidation or burning of the food, or in other words the digestion of the food. The same manner in which coal, wood, or fuels are burned to give heat or to produce energy to run machinery, so the food, which is the fuel of the body, is consumed, giving body heat and producing energy to keep the human machinery running. Every thought which passes thru the mind, every breath drawn, every particle of food digested, every motion of the body, requires energy and wears away the body tissue. When any part of a machine wears out or breaks down it must be replaced or repaired. In this particular the human and animal machines have a great advantage over other machines in that they can repair their own waste, and this building up of worn-out parts is accomplished by the digestion and assimilation of foods. A food, then, is anything which when taken into the body yields heat or gives energy or builds up bone, muscle or other body tissues.

All foods are divided into the following five classes:

1. Carbohydrates or Energy and Heat Producers.
   Among these foods are all foods containing starches and sugars, such as flour, potatoes, sugar, etc.
2. Proteids or Muscle Builders.
   The lean of meats, cheese, and eggs are included under this head.
3. Fats or Heat Producers.
   Butter and lard are examples of this kind.
4. Water.
   Three-fourths of the human body is water, and this is furnished by the water we drink and also by the so-called solid foods.
5. Mineral Matter.
   Found largely in fruits and green vegetables. Common table salt is the only mineral salt used in its natural form.

A well-balanced diet must contain all of these different kinds of food materials, and the proportion of each kind of food will vary with the age, sex, climate and occupation.

Food Requisites in Cold

The Eskimos and other peoples in cold regions are known to eat whale oil, tallow candles and other foods repulsive to people in warmer climates. In this they are but following natural instincts and are eating fatty foods, which are heat producers. In the cold winter months when the body is giving off more heat, fatty foods help to furnish the necessary body heat. On the other hand, during warm summer days the diet should be largely made up of foods giving bulk and furnishing little heat.

Food Requirements of Youth and Age.—The large appetites of growing children are proverbial. This is true for several reasons: first, children, because of the greater relative amount of surface exposed, give off more heat and so require more heat producing foods; second, children are more active than adults and need a greater amount of energy producing foods; third, they are growing and need more muscle and tissue builders. For all of these reasons children require more food in proportion to their size than do adults.

Old people need less food than younger and more active people. Many sudden deaths among middle aged and old people apparently due to apoplexy or heart failure, are traceable to overeating. The amount of food eaten is largely habit, and in many cases older people no longer so active as they were, do not materially change the amount or kinds of food. Often they are urged by the younger members of their family to eat more than is necessary under the mistaken idea that the food is necessary to keep up their strength, when in reality their lack of appetite is due to lack of activity, and they would be much better for a lighter diet.

Relation of Sex and Work on Food Needs.—A woman should eat about three-fourths as much food as a man, provided, of course, that they are working and living under the same conditions.

The amount and kind of work or exercise is a great factor in determining the amount and kind of food needed. A man working in the open air at hard labor requires more food and a coarser and bulkier food than the same man could eat if working in doors, because the larger amount of fresh air helps him to oxidize or burn up the food, in other words to digest it. A farmer in order to keep from getting hungry between meals requires a heavier and coarser food than does the lawyer or bookkeeper, who if he should try the diet suitable for the farmer would soon became a dyspeptic.

Any one whose digestion is disordered is very apt to become irritable and impatient, and much bad temper is due, not to bad disposition but to bad digestion. In providing the daily food for the members of her family, the woman has in her care not only their physical well being but to a considerable degree their mental and moral natures as well.

A GOOD TYPE OF ROASTER

This excellent kitchen utensil may be easily kept sweet, clean and sanitary, because it is perfectly smooth and seamless. It will roast meat, fish or fowl so that it is tender, juicy and full of sweet natural flavor, and do it without basting or other attention. This roaster comes in three sizes, steel or enameled, and costs $1 up, according to size. It or similar types can be found in the kitchenware departments of most good housefurnishing stores.

SOME WAYS OF USING PRUNES

Prune Chartreuse.—Line a mold with lemon jelly, decorate the bottom with prunes having first been stoned and let them stand till set. Fill the center with the following mixture: Make a custard with three eggs, one cupful of milk, two tablespoonfuls of powdered gelatine and allow to dissolve. When this is cold, stir in one cupful of prune puree, half a cupful of sugar, and one cupful of whipped cream. Just as it is beginning to set, pour into the prepared mold. Turn out, and serve with whipped cream.

Frozen Cream Cheese With Steamed Prunes.—Two Neufchatel cheeses, half a cupful of thick cream, one-fourth of a teaspoonful of salt, one teaspoonful of sugar and some preserved figs. Mash the cheese to a smooth paste, and add the cream, sugar and salt. Make into squares then bury in ice and salt for several hours. When ready to serve place each on a lettuce leaf, decorate the center of the cheese with a steamed prune stood on end and serve at once.

Prune Russe.—One-fourth of a pound of prunes, one strip of lemon rind, half a cupful of water, one-fourth of a pound of lady fingers, eight pistachio nuts, one tablespoonful of red currant jelly, one teaspoonful of powdered gelatine, one cupful of whipped cream, one teaspoonful of vanilla extract, and two tablespoonfuls of sugar. Soak and stew the prunes in the water with the lemon rind. When quite soft, rub thru a sieve, return to the saucepan, add the red currant jelly and the gelatine dissolved in a little of the juice left over from the prunes. Line a round mold with lady fingers and pour the prune mixture into the center. When cold, turn it out, heap up the whipped cream (sweetened and flavored) on it, and sprinkle the chopped pistachio nuts over it.

Tommy Truckfarm: "Say, Ma, I'm awful glad you're done your wash. I want a lunch to go fishing with. Oh, what do you think—I was out looking at the chickens and that city girl pointed to a chicken and ast me if it laid an egg what would I do with it. I sez 'I'd send it to a museum. That chicken's a rooster.' Ain't you glad you heard about Fels-Naptha Soap and can get your work done so soon!"

Anty Drudge: "It looks to me like you're glad, too. Fels-Naptha is the friend of every one. I always keep a box on hand so's I'll be *sure* to have enough."

The Fels-Naptha way is the best way and the easiest way of doing all kinds of work.

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Full directions on the red and green wrapper.

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TEETH AND HEALTH

By A. M. Sellars, D.D.S.

We all realize the value of teeth from the standpoint of appearances, but few people comprehend the importance of a well-kept mouth from the standpoint of health. When care of the mouth is spoken of, visions of the dentist's chair and the real or imaginary tortures endured therein arise before the mind. It is a mistaken idea that the time to care for the teeth begins when a need for the dentist's services manifests itself. The care of the mouth should begin at birth, and continue thru life.

Bacteria in the Mouth

The mouth contains all the conditions favorable to the growth of bacteria, and many different kinds are found there. Much of the indigestion in infancy is caused by failure to properly cleanse the mouth after each feeding. Fermentation takes place, and the fermented matter is carried down into the stomach. Many an individual has been compelled to go through life with a weak digestion made so weak by neglect and mismanagement in childhood. Habits both good and bad can be formed. If the mother is careful that the babe's mouth is cleansed after each feeding and she continues this practice until the child is old enough to care for its own mouth, a good habit will have been formed and there will be no trouble in getting the child to keep up the practice.

People would not think of serving a meal on the unwashed dishes of the previous meal, but they will permit food to remain in unfilled cavities in their teeth, to decompose and to be mixed with the food of the next meal.

Teeth Cutting Trouble

If the mother forms the habit of cleansing baby's mouth after each feeding there will probably be less trouble with the digestion during the eruption of the teeth. The eruption of the teeth causes more or less inflammation of the gums, and the extra heat creates a better medium for the growth of microbes. At this time nature herself attempts to provide a remedy for the evil consequences which would naturally follow the inflammatory condition which necessarily prevails in the mouth when babies are getting their first teeth. An increased flow of saliva is the first sign of the coming of the teeth. Then, too, its great abundance helps to wash the mouth free of any food which remains after feeding. This is a very good illustration of the wonderful manner in which nature tries to provide for our welfare.

The time of the eruption of the temporary teeth is too often an unnecessary period of stress. Even when the teething process follows a normal course the gums are more or less tender, but they are made actually painful by improper preparation for this period by the right kind of feeding and care. Particular attention should be given to the food of the child during this period. The quantity of the food taken many times has an important bearing on the digestion. The child may be getting too much or it may be getting too little nourishment from what it does take. You should have the advice of a competent physician about this. The only set rule is that the child must be nourished. The kind and amount will depend on the child itself. No man or woman with painful teeth and gums and living on insufficient nourishment is capable of the highest degree of efficiency. So likewise no child suffering from painful mouth conditions and faulty nutrition can grow properly. Many of the physical handicaps that mature people contend with were caused by the interruptions to the normal development in the growing period. This growing time lasts only one-fourth of a long life.

Care of Temporary Teeth

After the temporary teeth are in place the inflammatory condition which has existed most of the time from the sixth to the twentieth months will subside. Normal conditions will prevail until about the sixth year, when eruption of the permanent teeth begins. All cavities in the temporary teeth should have been kept filled, as it is impossible for a child to have good conditions for preservation of the permanent teeth if the temporary teeth are not kept filled.

It is important that the temporary teeth be kept in place until the permanent ones that will take their places are ready to erupt. One mistake often made by mothers is thinking that the sixth-year molar, which erupts just back of the temporary molars (which come in before the end of the second year) is a temporary tooth. Every mother should write down in her memory that the temporary teeth are ten in number in each jaw, and that they will all be in place before the end of the third year.

The Permanent Teeth

The molar which comes in the sixth year is the first permanent tooth to erupt. During the eruption of the permanent teeth we again have to combat inflammation of the gums.

Between the sixth and fourteenth year the teeth are extremely susceptible to decay. In the last three years that each temporary tooth remains in the mouth the roots are undergoing absorption, hence treating and filling them is a very unsatisfactory process. This makes it almost impossible to prevent all decay from being present in the mouth. During this time when extra care of the teeth is required to keep them clean seems to be just the time when most mouths are neglected. This would not so often be the case if mothers began right and kept their work up till the child itself is old enough to understand the importance of a clean mouth.

If the permanent teeth erupt in such a manner as to prevent closing the lips properly, a dentist should be consulted. The nose was made to breathe thru, but if the lips cannot be comfortably closed mouth breathing will be the result with all its resulting dangers and ills. Besides the nose can not be developed properly without proper use.

Pyorrhea alveolaris, which results in receding gums and loosened teeth, would probably be almost eliminated if teeth were not neglected at some period in life. Very often this neglect occurs during illness, and the evil effects are not noticed till considerable damage is done.

It is never too late to begin to take proper care of the mouth. If neglect has caused damage more neglect will cause more damage, hence the time to begin is when you realize that it is necessary.

BE CAREFUL WITH MATCHES.

The match, while only a small instrument, is a very dangerous one under certain conditions. Few people realize what a dangerous combination matches and mice may form. It is probable that many a fire, the origin of which has seemed a mystery, was caused by mice nibbling at the heads of matches, thus igniting them and setting fire to the buildings. It is thought that the fumes of match heads induce mice to nibble at them.

Personally, I had not realized the danger from fire along this line until six years ago when fire broke out in an upstairs closet of a room that contained no chimney or any chance for fire to have started except by a mouse and a match. One afternoon smoke was discovered to be forming in one of the rooms down stairs; it was traced to the room upstairs which contained the closet mentioned above. The contents of this closet, also the bed clothes of a bed near the closet were on fire. The fire was kept from gaining rapid headway by the fact that the window and door of this room were closed when the fire started. Entrance to the room could be gained only by placing a ladder to the window from the outside. By prompt assistance from neighbors who were given the alarm by telephone, the fire was gotten under control.

We ascertained that mice had chewed thru the chair-board of this room, and had built nests in the closet among some of the material stored in it, for a charred nest was found in the smouldering material in the closet. This room had been used for a bedroom by a hired man, and matches were found in an open box on a stand where it was possible for the mice to get at them. As there was absolutely no chance for fire to start in this closet except by matches being carried there and ignited by mice, this experience reveals how dangerous a combination matches and mice may prove to be.

Since this experience we have made it a rule to keep all matches in boxes with a lid, and all employes are instructed to keep the lid of box closed so that mice can not gain entrance to the matches. Empty cigar boxes with the lid on or other similar boxes are suitable for this purpose. I do not think that employes are so apt to drop matches and let them lie on the floor, when getting them from a convenient-sized box as when pulled from a match safe hung on the wall.

Another dangerous practice is carrying matches loose in the pocket, especially by hired men who chore and labor in the barns. Especially is this true if the matches are carried in the pocket with articles, possibly to be pulled from the pocket with other articles and dropped in the barn unknowingly. When I have an employe who is in the habit of carrying matches in his pocket I insist that he carry them in some good match safe, and if he hasn't one I purchase one for him. It is impossible to keep all mice out of the barns, so I try as much as possible to avoid any chances of matches being dropped in the barn by employes. Even tho some employes assert that they carry their matches in a separate pocket, I do not consider this safe, for at times certain kinds of labor require a man to work in such a position as to cause the matches to drop from his pocket.

It is true that the tipped matches now manufactured are not so dangerous as the old-fashioned sulphur match, yet this tip if properly nibbled by a mouse could be ignited. There is a safety match manufactured that will not light except on the box, or by fire. These matches would be ''it'' if they were entirely satisfactory as a general purpose match, but I haven't found any yet that are so.

There is no doubt that many of the fires supposed to be caused by spontaneous combustion or of ordinary origin could be traced to matches ignited by mice or by trampling of animals in the barn. I doubt if many fires are started by spontaneous combustion caused by hay or grain heating, as it is claimed that hay or grain would have to reach a degree of heat 100 degrees hotter than boiling water before spontaneous combustion could take place.—C. R. Weidle, Erie Co., Pa.

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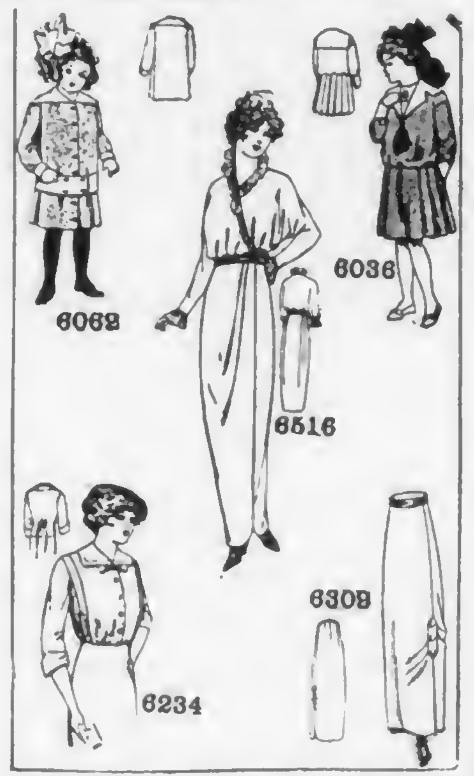

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Winston of the Prairie

By HAROLD BINDLOSS

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SYNOPSIS OF PREVIOUS CHAPTERS.

Farmer Winston, having failed as a homesteader, desperate, accepts a proposal to simulate Lance Courthorne, an adventurer. Courthorne and his pals are thus able to carry thru some smuggling operations. In the clash with the police, Courthorne kills Trooper Shannon, leaving evidence pointing to Winston as the murderer. The scene shifts to Silverdale, founded by Colonel Barrington. The Colonel is worried over wheat operations and the coming advent of Lance Courthorne, cousin to Maud Barrington, niece and ward of Colonel Barrington, to claim his share of his father's estate. Maud Barrington is told of Courthorne's past misdeeds. Winston, meanwhile, has pushed on to Montana, being held and later released, for lack o evidence, by a government officer, who discloses the belief on the part of the police that Winston is the murderer of Trooper Shannon. A letter for Courthorne is opened by Winston. Complying with instructions therein, he meets and confers with a lawyer respecting Courthorne's inherited acres at Silverdale, and following out his role as simulator of Courthorne, goes to Silverdale and is there received as graciously as could be expected. Some of his actions fail to tally with Courthorne's reputation. He wins the good will of Dane, one of the Colonel's advisers. The real Courthorne, who was supposed to have been drowned during the smuggling adventure, now reappears in Montana, inadvertently learns of his inheritance, and pieces together conclusive evidence that Winston has gone to Silverdale. Courthorne and Ailly Blake, whose life he has blighted, agree to ignore each other's identity. Winston and Maud Barrington, caught by a blizzard while driving to Silverdale, find shelter in a deserted shed over night, where he acts the part of a considerate gentleman. Maud Barrington promises Winston to sow her land in wheat the following spring. Under criticism from the Colonel Winston begins planting operations. He is commended by Maud Barrington for successful efforts to break the gambling habits of Ferris, a young Englishman, a task undertaken at her request. Courthorne now appears and Winston contracts to advance him money, provided he absents himself immediately. During a fire which threatens the wheat fields Winston is injured. Suspicions point to Ferris as the incendiary. Questioned, he admits his guilt, and is dispatched from the settlement. Winston soon recuperates. He goes to Winnipeg, meets and advises with Graham, a broker and by watching the market sells his wheat and that of friends at big profits. In gratitude Winston's friends pledge him their loyalty and unbiased support in Silverdale affairs. Colonel Barrington disregarding advice loses heavily.

CHAPTER XIX

Under Test

The prairie lay dim and shadowy in the creeping dusk when Winston sat a redwood stringer near the head of his partly-finished bridge. There was no sound from the hollow behind him but the faint gurgle of the creek, and the almost imperceptible vibration of countless minute wings. The birches which climbed the slope to it wound away sinuously, a black wall on either hand, and the prairie lying gray and still stretched back into the silence in front of him. Here and there a smoldering fire showed dully red on the brink of the ravine, but the tired men who had lighted them were already wrapped in heavy slumber.

The prairie hay was gathered, harvest had not come and for the last few weeks Winston, with his hired men from the bush of Ontario, had toiled at the bridge with a tireless persistency which had somewhat astonished the gentlemen farmers of Silverdale. They, however, rode over every now and then, and most cheerfully rendered what assistance they could, until it was time to return for tennis or shooting sweepstake, and Winston thanked them gravely, even when he and his Ontario axmen found it necessary to do the work again. He could have told nobody why he had undertaken to build the bridge, which could be of no use to him; but he was in a measure prompted by instincts born in him, for he was one of the Englishmen who, with a dim recognition of the primeval charge to subdue the earth and render it fruitful, gravitate to the newer lands, and usually leave their mark upon them. He had also a half-defined notion that it would be something he could leave behind in reparation, that the men of Silverdale might remember more leniently the stranger who had imposed on them; while in the strain of the mental struggle strenuous occupation was a necessity to him.

A bundle of papers it was now too dim to see lay beside him clammy with dew, and he sat bare-headed, a pipe which had gone out in his hand, staring across the prairies with an ironical smile in his eyes. He had planned boldly and striven tirelessly, and now the fee he could not take would surely be tendered him. Wheat was growing dearer every day, and such crops as he had sown had not been seen at Silverdale. Still, the man who had few compunctions before he met Maud Barrington, knew now that in a little while he must leave all he had painfully achieved behind. What he would do then he did not know, for only one fact seemed certain—in another four months, or less, he would have turned his back on Silverdale.

Presently, however, the sound of horse-hoofs caught his ears, and he stood up when a mounted figure rose out of the prairie. The moon had just swung up, round and coppery, from behind a rise, and when horse and rider cut black and sharp against it his pulses throbbed faster and a little flush crept into his face, for he knew every line of the figure in the saddle. Some minutes had passed when Maud Barrington rode slowly to the head of the bridge, and pulled up her horse at the sight of him.

The moon turning silver now shone behind her head, and a tress of hair sparkled beneath her wide hat, while the man had a glimpse of the gleaming whiteness of rounded cheek and neck. Her face he could not see, but shapely shoulders, curve of waist, and sweeping line of the light habit were forced up as in a daguerreotype and as the girl sat still looking down on him, slender, lissom, dainty, etherealized almost by the brightening radiance, she seemed to him a visionary complement of the harmonies of the night. It also appeared wiser to think of her as such than a being of flesh and blood whom he had ventured to long for, and he almost regretted when her first words dispelled the illusion.

"It is dreadfully late," she said. "Pluto went very lame soon after I left Macdonald's, and I knew if I went back for another horse he would have insisted on riding home with me. I had slipped away while he was in the granary. One can cross the bridge?"

"Not mounted!" said Winston. "There are only a few planks between the stringers here and there, but, if you don't mind waiting, I can lead your horse across."

He smiled a little, for the words seemed trivial and out of place in face of the effect the girl's appearance had on him, but she glanced at him questioningly.

"No!" she said. "Now, I would have gone round by the old bridge, only that Allardyce told me you let him ride across this afternoon."

"Still," and the man stopped a moment, "it was daylight then, you see."

Maud Barrington laughed a little, for his face was visible and she understood the slowness of his answer. "Is that all? It is moonlight now."

"No," said Winston dryly, "but one is apt to make an explanation too complete occasionally. Will you let me help you down?"

Maud Barrington held out her hands, and when he swung her down watched him tramp away with the horse, with a curious smile. A light compliment seldom afforded her much pleasure, but the man's grim reserve had now and then piqued more than her curiosity, tho she was sensible that the efforts she occasionally made to uncover what lay behind it were not without their risk. Then he came back, and turned to her very gravely.

"Let me have your hand," he said.

Maud Barrington gave it to him, and hoped the curious little thrill that ran thru her when his hard fingers closed upon her palm did not communicate itself to him. She also noticed that he moved his head sharply a moment, and then looked straight in front again. Then the birches seemed to fall away beneath them, and they moved out across the dim gully with the loosely-laid planking rattling under their feet, until they came to a strip scarcely three feet wide which spanned a gulf of blackness in the shadow of the trees.

"Hold fast!" said Winston, with a trace of hoarseness. "You are sure you feel quite steady?"

"Of course!" said the girl, with a little laugh, tho she recognized the anxiety in his voice, and felt his hand close almost cruelly on her own. She was by no means timorous, and still less fanciful, but when they moved out into the blackness that closed about them above and beneath along the slender strip of swaying timber she was glad of the masterful grip. It seemed in some strange fashion portentous, for she felt that she would once more be willing to brave unseen perils, secure only in his guidance. What he felt she did not know, and was sensible of an almost overwhelming curiosity, until when at last well-stiffened timber lay beneath them, she contrived to drop a glove just where the moonlight smote the bridge. Winston stooped, and his face was clear in the silvery light when he rose again. Maud Barrington saw the relief in it, and compelled by some influence stood still looking at him with a little glow behind the smile in her eyes. A good deal was revealed to both of them in that instant, but the man dared not admit it, and was master of himself.

"Yes," he said, very simply, "I am glad you are across."

Maud Barrington laughed. "I scarcely fancy the risk was very great, but tell me about the bridge," she said. "You are living beside it?"

"Yes," said Winston. "In a tent. I must have it finished before harvest, you see!"

Winston smiled dryly. "I am used to it, and can do all the cooking that is necessary," he said. "It is the usual home for the beginner, and I lived six months in one—on grindstone bread, the tinctured glucose you are probably not acquainted with as 'drips,' and rancid pork—when I first came out to this country and hired myself, for ten dollars monthly, to another man. It is a diet one gets a little tired of occasionally, but after breaking prairies twelve hours every day one can eat almost anything, and when I afterwards turned farmer my credit was rarely good enough to provide the pork."

The girl looked at him curiously, for she knew how some of the smaller settlers lived, and once more felt divided between wonder and sympathy. She could picture the grim self-denial, for she had seen the stubborn patience in this man's face, as well as a stamp that was not born by any other man at Silverdale. Some of the crofter settlers, who periodically came near starvation in their sod hovels, and the men from Ontario who staked their little handful of dollars on the first wheat crop to be wrested from the prairie, bore it, however. From what Miss Barrington had told her, it was clear that Courthorne's first year in Canada could not have been spent in this fashion, but there was no doubt in the girl's mind as she listened. Her faith was equal to a more strenuous test.

"There is a difference in the present, but who taught you bridge-building? It takes years to learn the use of the ax," she said.

Winston laughed. "I think it took me four, but the man who has not a dollar to spare usually finds out how to do a good many things for himself, and I had working drawings of the bridge made in Winnipeg. Besides, your friends have helped with their hands as well as their good-will. Except at the beginning, they have all been kind to me, and one could not well have expected very much from them then."

Maud Barrington colored a trifle as she remembered her own attitude towards him. "Cannot you forget it?" she said, with a curious little ring in her voice. "They would do anything you asked them now."

"One generally finds it useful to have a good memory and I remember most clearly that, altho they had very little reason for it, most of them afterwards trusted me. That made, and still makes, a great difference to me."

The girl appeared thoughtful. "Does it?" she said. "Still, do you know, I fancy that if they had tried to drive you out, you would have stayed in spite of them?"

"Yes," said Winston dryly. "I believe I would, but the fact that in a very little while they held out a friendly hand to a stranger steeped in suspicion, and gave him the chance to prove himself their equal, carries a big responsibility. That, and your aunt's goodness, puts so many things one might have done out of the question."

The obvious inference was that the prodigal had been reclaimed by the simple means of putting him on his honor, but that did not for a moment suggest itself to the girl. She had often regretted her own disbelief and once more felt the need for reparation.

"Lance," she said, very quietly, "my aunt was wiser than I was, but she was mistaken. What she gave you out of wide charity was already yours by right."

That was complete and final, for Maud Barrington did nothing by half, and Winston recognized that she held him blameless in the past, which she could not know, as well as in the present which was visible to her. Her confidence stung him as a whip, and when in place of answering he looked away, the girl fancied that a smothered groan escaped him. She waited, curiously expectant, but he did not speak, and just then the fall of hoofs rose from behind the birches in the bluff. Then a man's voice came thru it singing a little French song, and Maud Barrington glanced at her companion.

"Lance," she said, "how long is it since you sang that song?"

"Well," said Winston, doggedly conscious of what he was doing, "I do not know a word of it, and never heard it in my life."

Maud Barrington stared at him. "Think," she said. "It seems ever so long ago, but you cannot have forgotten. Surely you remember Madame Aubert, who taught me to prattle in French, and the day you slipped into the music-room and picked up the song, while she tried in vain to teach it to me. Can't you recollect how I cried, when you sang it in the billiard-room, and Uncle Geoffrey gave you the half-sovereign which had been promised to me?"

"No," said Winston, a trifle hoarsely, and with his head turned from her watched the trail.

A man in embroidered deerskin jacket was riding into the moonlight, and tho the little song had ceased, and the wide hat hid his face, there was an almost insolent gracefulness in his carriage that seemed familiar to Winston. It was not the abandon of the swashbuckler stock-rider from across the frontier, but something more finished and distinguished that suggested the bygone cavalier. Maud Barrington, it was evident, also noticed it.

"Geoffrey Courthorne rode as that man does," she said. "I remember hearing my mother once tell him that he had been born too late, because his attributes and tastes would have fitted him to follow Prince Rupert."

Winston made no answer, and the man rode on until he drew bridle in front of them. Then he swung his hat off, and while the moonlight shone into his face looked down with a little ironical smile at the man and woman standing beside the horse. Winston closed one hand a trifle, and slowly straightened himself, feeling that there was no need of all his self-control, for he saw his companion glance at him, and then almost too steadily at Lance Courthorne.

The latter said nothing for a space of seconds, for which Winston hated him, and yet in the tension of the suspense he noticed that the signs of indulgence he had seen on the last occasion were plainer in Courthorne's face. The little bitter smile upon his lips was also not quite in keeping with the restlessness of his fingers upon the bridle.

"Is that bridge fit for crossing, farmer?" he asked.

"Yes," said Winston quietly. "You must lead your horse."

Maud Barrington had in the meanwhile stood very still, and now moved as by an effort. "It is time I rode on, and you can show the stranger across," she said. "I have kept you at least five minutes longer than was necessary."

Courthorne, Winston fancied, shifted one foot from the stirrup, but then sat still as the farmer held his hand for the girl to mount by, while when she rode away he looked at his companion with a trace of anger as well as irony in his eyes.

"Yes," said Winston. "What you heard was correct. Miss Barrington's horse fell lame coming from one of the farms, which accounts for her passing here so late. I had just led the beast across the incompleted bridge. Still, it is not on my account I tell you this. Where have you been and why have you broken one of my conditions?"

Courthorne laughed. "It seems to me you are adopting a somewhat curious tone. I went to my homestead to look for you."

"You have not answered my other question, and in the meanwhile I am your tenant, and the place is mine."

"We really needn't quibble," said Courthorne. "I came for the very simple reason that I wanted money."

"You had one thousand dollars," said Winston dryly.

Courthorne made a little gesture of resignation. "It is, however, certain that I haven't got them now. They went as dollars usually do. The fact is, I have met one or two men recently who apparently know rather more games of chance than I do, and I passed on the fame which was my most valuable asset, to you."

"You passed me on the brand of a crime I never committed," said Winston grimly. "That, however, is not the question now. Not one dollar except at the time agreed upon, will you get from me. Why did you come here dressed as we usually are on the prairie?"

Courthorne glanced down at the deerskin jacket and smiled as he straightened himself into a caricature of Winston's mounted attitude. It was done cleverly.

"When I ride in this fashion we are really not very unlike, you see, and I let one or two men I met get a good look at me," he said. "I meant it as a hint that it would be wise of you to come to terms with me."

"I have done so already. You made the bargain."

"Well," said Courthorne, smiling, "a contract may be modified at any time when both parties are willing."

"One is not," said Winston dryly. "You heard my terms, and nothing that you can urge will move me a hairsbreadth from them."

Courthorne looked at him steadily, and some men would have found his glance disconcerting, for now and then all the wickedness that was in him showed in his half-closed eyes. Still, he saw that the farmer was unyielding.

"Then we will let it go; in the meanwhile," he said "take me across the bridge."

They were half-way along it when he pulled the horse up, and once more looked down on Winston.

"Your hand is a tolerably good one so long as you are willing to sacrifice yourself, but it has its weak points, and there is one thing I could not tolerate," he said.

"What is that?"

Courthorne laughed wickedly. "You wish me to be explicit? Maud Barrington is devilishly pretty, but it is quite out of the question that you should ever marry her."

Winston turned towards him with the veins on his forehead swollen. "Granting that it is so, what is that to you?"

Courthorne nodded as if in comprehension. "Well, I'm probably not consistent, but one rarely quite loses touch with everything, and if I believed that my kins-woman was growing fond of a beggarly prairie farmer, I'd venture to put a sudden stop to your love-making. This, at least, is perfectly bona fide, Winston."

Winston had borne a good deal of late, and his hatred of the man flared up. He had no definite intention, but he moved a pace forward, and Courthorne touched the horse with his heel. It backed, and then, growing afraid of the blackness about it, plunged, while Winston for the first time saw that there was a gap in the loosely-laid planking close behind it. Another plunge or flounder, and horse and rider would go down together.

For a moment he held his breath and watched. Then as the beast resisting its rider's efforts backed again, he sprang forward and seized the bridle.

"Get your spurs in! Shove him forward for your life," he said.

There was a momentary struggle on the slippery planking, and, almost as its hind hoofs overhung the edge, Winston dragged the horse away. Courthorne swung himself out of the saddle, left the farmer the bridle, and glanced behind him at the gap. Then he turned, and the two men looked at each other steadily. Their faces were a trifle paler than usual.

"You saw it?" asked Courthorne.

"Yes, but not until you backed the beast and he commenced plunging."

"He plunged once or twice before you caught the bridle."

"Yes," said Winston quietly.

Courthorne laughed. "You are a curious man. It would have cleared the ground for you."

"No," said Winston dryly. "I don't know that you will understand me, but I scarcely think that it would. It may have been a mistake of mine to do what I did, but I have a good deal on my shoulders already."

Courthorne made no answer as he led his horse across the bridge. Then he mounted, and looked down on the farmer who stood beside him.

"I remember some things, tho I don't always let them influence me to my detriment," he said. "I'm going back to the railroad, and the West, and don't quite know when you will have the pleasure of seeing me again."

Winston watched him quietly. "It would be wiser if you did not come back until I send for you."

(To be continued)

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PHILADELPHIA PRODUCE

Philadelphia, Pa., Jan. 19, 1914.

Receipts of strictly fancy fresh creamery butter were light and demand absorbed supply at firm prices. Receipts of eggs were fairly liberal, with demand almost absorbing supply. Desirable poultry stock receipts were light and demand firm. Fruits and vegetables in moderate movement, with prices unchanged.

Butter.—Western creamery, 37c; extras, 35c; firsts to seconds, 27@31c; special prints, 41@44c; near-by prints, 38c.

Eggs.—Candled, 38@40c doz; extras, 36c. Currents receipts at $9.90 per standard case. Near-by firsts, $10.20 standard case.

Poultry.—Fowls 15@16c; young chickens 15@16c; old roosters, 11@12c; turkeys, 17@19c; ducks 16@18c; geese. 15@17c pigeons, 22@25c pair.

Dressed Poultry.—Western fowls, 15@18c; roosters, 13½c; turkeys, 17@24½c; roasting chickens, 14@19c; ducks 11@17c; squabs, $2.00@4.85 doz.

Vegetables.—White Potatoes, Pa., 75@90c bu. Onions, $2.00@2.35 per 100-lb bag. Lettuce $1.00@2.00 hamp. Sweet Potatoes, 40@55c bas; Squash, $1.00@1.50 crate. Celery 60c@$1 bch. Cabbage, $1.75@2 bbl; Cauliflower $1.75@2.00 hamp. Mushrooms 60c@$1.50 per 4-lb bas.

Fruits.—Apples, choice, $3.00@5.50 bbl Cranberries, $2.50@3.25 box. Lemons $2.50@3.50 box Grapefruit, $2.50@5.00 box Oranges, $1.50@3.00 box. Pears, 40@75c bas. Pineapples, $2.00@3.50 crate. Grapes, almeria, $4.00@6.00 keg.

Hay and Grain.—No. 3, large bales, $19.00@19.50. No. 1 medium bales, $18.50@19.00, No. 2 medium $17.00@17.50; no grade $10.00@12.00. Clover mixed hay, light mixed at $17.00@17.50. Straw, No. 1, straight rye, $17.00; No. 2 do., $16.00; No. 1 tangled rye straw $12.00; No. 2 do., $11.00@$11.50 No. 1 wheat straw, $9.50@10.00; No. 1 oat straw, $10@10.50; new shelled corn No. 2 yellow, kiln dried 71@72c; Natural No. 2 yellow, 69½@70½c. Wheat No. 2 red 95@95½c; No. 1 Northern 99½@$1.00½; No. 2 white oats 45½@46c; No. 3 white, 44@44½c. Standard white 45@45½c.

Coffee.—Rio 7s 9⅜c; Santos 4s 12⅜c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.05 cwt.; cubes, $4.35; powdered, $4.15; granulated, $4.05; standard granulated, $4.10; crystal A, $4.05.

Flour.—For 196 lbs. in wood, winter-clear, $3.75@4.00; do. straight, $4.25@4.50; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 17c; do. country, 15c. Cows, 16c; do. country, 14½c. Bulls abattoir, 14½c; do country, 13c. Calf skins, Nos. 5 to 12 and up, $1.45@2.70; do. green, 14@15c.

Provisions.—City beef, in sets, smoked and air-dried, 33@33½c. Beef hams, $40@$42. Pork, family, $23@24 Hams, cured, 14@15c; skinned, 13½@14½c; smoked, 16@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 9¾@9½c; do smoked, 11½@12c. Bellies in pickle, 14¾@15½c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11½@11¾c tcs; do in tubs, 11½@12c; do kettle rendered, 11½@12c. Tallow, prime city, 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 15c ¼-pk. Peppers, 2 for 5c. Eggplants 15@25c apiece. Cabbage, 5c head Lettuce, 10c head. Beets 10c bch. Sweet potatoes, 15 ¼-pk. White potatoes, 25c ½-pk. String beans, 15c qt. Tomatoes, hothouse, 40c lb. Cucumbers, 5@15c apiece. Celery 25c doz stalks. Squash, 5@10c. Cauliflower, 15@25c head.

Fruits. — Pears, 15c ¼-pk. Grapes 25c lb. Apples, 20@25c ¼-pk. Pineapples, 15@25c apiece. Cranberries, 15c qt. Lemons 15c doz; Grapefruit, 2 for 25c; Oranges, 30@50c doz.

NEW YORK PRODUCE

New York City, Jan. 19, 1914

Choice butter stock brought fairly good prices. Trade in eggs is quiet, with the tone of the market unsettled and weak. Poultry market irregular, with only fair stock and prices unsteady. Fruits and vegetables show little change.

Eggs.—State and near-by hennery whites, fine to fancy, 40@42c; gathered whites, 40@41c; fair to good, 38@39c; no grades, 36@37c; fresh gathered, firsts to extras 33@37c; seconds to thirds, 27@32½c; no grades, 23@25c; mixed 34@35c

Butter.—Creamery, firsts to extras, 29@34c; thirds to seconds, 23½@28½c; state dairy, 21@32c; packing stock 18@21c; process, 21@25c.

Cheese.—Whole milk specials, 17¾@18c; do. common to fancy, 14½@17c; skims 3@11½c.

Dressed Poultry.—Turkeys, dry, 18@25c; chickens, 16@25c; fowls, 12@19c; old roosters, 12½c; ducks 13½c.

Live Poultry.—Prices not settled.

Vegetables.—Cabbage, $23.00@30.00 ton. Green beans, $1@3.75 bas. Carrots, $1@1.37 bag. Cucumbers, $2@4.50 box. Lettuce, $1.25@2.50 bas. Squash, $2.00@2.50 bbl. Celery, $1.75@4 per standard case. Onions $2@2.10 100-lb bag. Tomatoes, $1.25@2.50 carrier. Peppers $1.50@1.75 per carrier. Beets, $2@4 per 100 bunches. Potatoes, $2.25@5.00 bbl. Sweet Potatoes, $1.50@1.90 bble. Eggplants, $2.50@3.50 box. Cauliflower $1.00@1.75 bas.

Fruit.—Apples, $2@5.00 bbl. Cranberries $9@14 bbl. Pears, $2@3.75 bbl.

Grain.—Wheat, No. 2, red, $1.00½. No. 1 Northern, $1.01¾c; corn, No. 3 yellow, new 71c; oats standard, white, 45½@46c.

BUFFALO PRODUCE

Buffalo, N. Y., Jan. 19, 1914.

Butter.—Easier; Creamery choice, 33@34c. dairy, 32@33c.

Cheese.—Light demand. Fancy new 17½@18c; good to choice 16@17c; common, 14@15c.

Eggs.—Firm, mixed 38@39c; do candled 36@37c; Western do. 35@36c; storage, 31@33c.

Live Poultry.—Steady. Turkeys 22@23c springers, 14@16c; ducks, 16@18c; geese 16@18c; fowls 13@18c; old roosters, 11@12c.

Vegetables.—Potatoes, 65@82c per bushel Cabbage, new $2@2.50 crate; Squash, $3@3.50 cwt; Turnips yellow, 75@90c bbl.

Fruits.—Apples, $4.00 @ 5.00 bbl.

Hay.—Steady. Timothy, choice on track, $17.50; No. 2 do., $16.50; No. 3, $15.00; rye straw, $8.50@9.00; oat and wheat straw, $7@8.00.

Feed.—Firm. Spring bran, carloads $23.50. Standard mids., $24.00, flour, $27.50. Corn meal, $23.00. Gluten, $30.00 Hominy $28.00. Oil meal, $30.00. Cottonseed meal $33.00.

WASHINGTON PRODUCE

Washington, D. C., Jan. 19, 1914.

Butter.—Best prints, per pound, 36c; tub, 35c; process, 28@29c; undergrades, 27c.

Eggs.—Near-by, firsts, per doz, 32@33c; Southern, per doz., 31@32c.

Live Poultry.—Hens, per lb., 15c; roosters, 10c; springers, 17@18c.

Dressed Poultry.—Hens, per lb., 16c; turkeys, per lb., 16c; chickens, 18@20c ducks 18@20c; roosters, per lb., 11c.

Vegetables.—Potatoes. $2.10@2.35 sack; Onions, $2.15@2.50 bag. Lettuce per bas., $1.00@2.50. Peppers $1.75@2.25 crate; Eggplant, $3.00@4.00 crate. Beets, $2.50@3.50 per 100 bchs. Carrots, $2@3.50 per 100. Cabbage, $2@3.50 bbl. Cucumbers, $3.50@5 bas. Sweet Potatoes, $1@2.50 bbl. Celery per doz., 35@85c. Tomatoes $2.50@4.50 crt. Cauliflower, $1.25@1.75 bas. Pumpkins, 5@10c each.

Fruit.—Apples, $1.50@6.00 bbl. Grapes. $4.50@7 ½ bbl. keg. Pineapples, $2@3 crate. Cranberries, $2.75@3.00 small box. Grapefruit, $3.50@4.25 crate.

YORK PRODUCE MARKET.

York, Pa., Jan. 19, 1914.

The dullness of the preceding week still prevailed in the various market houses this week. Creamery products remain normal in quantity and price, while the offering of vegetables is gradually narrowing down. Poultry stronger.

Eggs.—34@35c.

Butter.—Country, 33@35c; separator, 36@38c. Milk 6@7 per quart. Cream, 10@12c pint.

Poultry.—Hens 14@15c lb; springers 15@25c lb. Dressed poultry, 40@85c each.

Vegetables.—Potatoes, 7@15c ½-pk; 40@80c bu; cabbage, 3@8c each; lettuce, 3@5c; beets, 3@5 bch; radishes, 5c bch; onions, 3@5c bch, 12@16c per ½-pk; lima beans, 12@14c qt; sweet potatoes, 12@15 per ½-pk.; lard 14@16c lb; celery, 5@12c; peppers, 8@12c doz; eggplants, 3@8c each; turnips, 6@9c per ½-pk. soup beans, 10@12c qt; sauer kraut, 5@8c qt; apple butter, 18@22c qt.

Fruit.—Apples, 10@30c ½-pk; pears, 10@25c per ½-pk; chestnuts, 10@20c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.03 bu; corn, 90c; oats, 55c; rye, 77c; bran, $1.85 cwt.; middlings, $1.55 cwt.

Wholesale Grain Market — Wheat, 93c; corn, 70c; oats, 45c; rye, 67c.

WILMINGTON PRODUCE.

Wilmington, Del., Jan. 19, 1914

Butter.—Print butter, 38@45c lb. Creamery roll, 35 @ 45c.

Poultry.—Chickens, dressed, 18 @ 25c; ducks, 18@20c.

Eggs.—35@40c doz.

Vegetables.—Potatoes 10@12c ¼-pk. Cabbage, new, 4c up. Sweet potatoes, 45@50c bas. Onions, 10@12c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets, 5@8c bch. Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼-pk. Pineapples, 20@25c apiece. Grapes, 20@25c bas. Oranges, California, 25@30c doz. Florida, 35@50c doz. Bananas, 10@15c doz. Pears, 10@15c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼-pk. Grape fruit, 7@10c each.

PHILADELPHIA LIVE STOCK.

Philadelphia, Pa., Jan. 19, 1914.

The usual cold weather activity in beef-cattle was lacking. Offerings were light but ample, with prices firmly held on the most desirable steers. Pennsylvania, Ohio and Illinois cattle were on sale.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,316	13,557	6,463
Previous week	2,610	10,167	6,817

Best steers	$8.65@8.80
Choice steers	8.50@8.60
Good	8.30@8.40
Medium steers	7.87@8.10
Medium steers	7.50@7.65
Common steers	7.50@7.65
Bulls	5.25@6.70
Fat Cows	6.20@6.75
Medium cows	4.75@5.75
Thin cows	2.75@4.00
Milk cows	45.00@75.00

Veal calves steady.

Best calves	$11.50@12.00
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	6.50@7.00
Culls	5.00@8.00

Sheep.—There was a good increase in receipts, but demand was lacking. Values closed steady.

Choice wethers	$6.00@6.25
Good do.	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	5.00@5.25
Extra lambs	8.50@8.75
Good to choice do	8.00@8.25
Common to medium	6.50@7.75

Hogs.—Reflecting the outside situation, the market closed a trifle stronger under an advancing tendency. Inquiry was fairly normal. Westerns, as to size and quality are quoted at $11.75@11.87.

City Dressed Stock.—Every variety of choice and prime meats closed steady, trade being about normal. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@10c; extra wethers, 10½c. Spring lambs, 13@14c. Extras, 16c, Hogs 12@12¼c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Jan. 19, 1914.

Cattle.—The supply last Monday was 125 loads. The market ruled fairly active at about steady prices on the good cattle with weight, while the light and plain grades sold lower. Quite a number of the light weight grades on sale. Heifers ruled steady on all grades. Fat cows easier on best grades, while bologna grades were higher. Bulls steady to strong. Fresh cows and springers slow and $5 to $7.50 per head lower. Today's receipts numbered 100 loads. The demand was good and the market active to stronger.

Good to choice	$8.60@8.85
Good 1,300-1,400 lb.	8.30@8.60
Medium to good 1,200-1,300 lb.	8.15@8.35
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb	7.50@7.85
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.00@6.50
Heifers	5.50@7.75
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@00.00

Calves.—Receipts of calves fair, demand light and market closed 25 cents lower than Monday's opening. Arrivals today were 500 head. The market was steady.

Heavy and thin calves	$5.50@7.50
Veal Calves	9.00@12.00

Sheep and Lambs.—The supply of sheep and lambs has been fair; with a good demand the better grades of sheep have ruled steady to stronger while choice lambs ruled 10 cents per cwt. higher; other grades lambs slow. Today's sheep market was slow. Sheep were steady and lambs lower. Some 27 loads were on sale.

Prime wethers	$5.80@6.00
Good mixed	5.50@5.75
Fair mixed ewes and wethers	4.25@4.50
Culls to common	3.00@4.00
Spring lambs	5.00@8.25

Hogs.—The supply during the week has been liberal with a good demand the market has ruled stronger all week, the close for the week being 15 cents per cwt. higher on weighty grades and 20 cents higher on Yorkers and mediums. Arrivals totaled 70 double deck loads today. All grades shared a 5c advance.

Prime heavy	$8.65@
Prime medium weights	8.80@
Heavy mixed	8.70@
Best heavy Yorkers	8.80@
Light Yorkers	8.80@
Pigs	8.50@
Common to good roughs	8.25@8.50
Stags	6.75@7.25

BALTIMORE LIVE STOCK.

Baltimore, Md., Jan. 19.1914.

Cattle.—Receipts for the week, 2,740 head against 2,234 last week.

Steers	$6.25@8.50
Heifers	5.50@7.50
Cows	3.00@6.75
Bulls	5.50@7.25
Fresh Cows	35.00@80.00

Sheep and lamb receipts for the week were 2,314 head against 3,355 last week. Fair supply; market slow.

Sheep	$3.00@6.25
Lambs	5.50@8.60

Calf receipts for the week were 253 head. Fair supply; market steady at $6.50@11.25

Hog receipts for the week were 18,264 head against 21,553 last week.

Light Western	$9.00@9.10
Heavy to medium	8.95@9.05
Near-by	8.75@8.95
Pigs	8.25@8.60
Roughs	7.25@8.00

BUFFALO LIVE STOCK

Buffalo, N. Y., Jan. 19, 1914.

Cattle.—The colder weather of this week with the moderate supply gave a better tone to the butcher grades, while others were steady. On the close the market was steady for good butchers. Today's receipts were 150 cars. The market ruled steady.

Choice heavy steers	$8.75@9.00
Medium	8.00@8.65
Yearlings	7.50@8.00
Handy butchers	8.00@8.40
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.25@8.00
Butcher bulls	7.00@7.25
Feeders	6.00@7.00
Stockers	4.50@6.50
Cows and springers	30.00@90.00

Calves.—The basis was lower on the opening of the week, being $10.75@12. On the close calves sold active at $12 @12.50. Todays receipts were 800 head.

Choice veals	$11.50@12.00
Lights and thin	6.00@ 8.75

Sheep and Lambs.—The liberal supply on Monday was well cleaned up under the good demand, the basis on lambs being $8.25@8.35. Yearlings were in light supply and sold firm thruout the week at $5@7.25. Sheep were in good demand by country buyers at around $6@6.25; mixed sheep were a shade stronger. On the week's close the market was active and higher with liberal offerings. Yearlings ruled steady under a fair demand. Good mixed sheep sold at $5.25@5.75. Today's receipts were 110 cars. The market ruled lower.

Choice lambs	$8.00@8.15
Poorer grades	6.50@7.50
Yearlings	6.00@7.00
Wethers	6.00@6.25
Ewes	5.00@5.50
Sheep	5.50@5.75

Hogs.—The week opened with a very heavy run which lowered the price but the demand was good. Mixed heavy hogs ruled lower. Dairies were in fair demand at $8.25@8.50. On the close the demand was only fair and light weights were slow and easy. Yorkers were slow and lower. The receipts today were 110 cars. The market ruled strong.

Heavies	$8.65@8.70
Mixed and medium	8.65@8.70
Yorkers	8.65@8.70
Light Yorkers	8.65@8.70
Pigs	8.50@8.60
Roughs	7.50@7.75
Stags	6.50@7.25

Horses.—Some 250 head were sold this morning. With a moderate demand the top price on teams was $600, and on general purpose horses $100@175 each.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa, Jan. 19, 1914.

Hay.—While billings in transit show a slight increase, nevertheless arrivals are light and a good demand readily absorbs same, No. 1 timothy and No. 1 light clover mixed being placed readily at quotations and market is looking good. Slightly better demand for clover and heavy mixed, but scarcely sufficient to warrant heavy shipments. Off grades dull and slow sale.

No. 1 timothy	$17.50@	18.00
No. 2 timothy	15.50@	16.50
No 3 timothy	13.00@	14.00
No 1 light mixed	15.50@	16.00
No. 1 clover mixed	14.25@	14.75
No. 2 clover mixed	12.25@	13.25
No. 1 clover	14.25@	14.75
No. 2 clover	10.50@	12.00

Straw.—Demand a little better, owing to cold weather. Market slightly stronger.

No. 1 oat	$8.75@	9.00
No. 2 oat	8.00@	8.25
No 1 wheat	8.25@	8.50
No 2 wheat	7.75@	8.25
No. 1 rye	9.00@	9.50
No. 2 rye	8.50@	9.00

Ear Corn.—Receipts moderate, demand active. Market stronger.

New No. 2 yellow	68½@69c
New No. 3. yellow	65½@69c

Shelled Corn.—Receipts light and demand fully ample to take care of same.

New No. 2 yellow	70½@71c
New yellow No. 3, natural	68½@69c
New sample	64 @66c

Oats.—Demand for oats improved; receipts rather light. Market better.

No. 2 white	43 @43½
Standard oats	42¼@42½
Standard No. 3 oats	41 @41½

Mill Feed.—Bran in good demand, middlings dull.

No. 2 white midds, 100's	$28.00@$28.50
No. 1 brown midds, 100's	26.00@ 26.50
W. W. Bran, coarse, 100's	25.50@ 26.00
W. W. Bran, medium, 100's	24.50@ 25.00

NEW YORK LIVE STOCK.

New York City, Jan., 19, 1914.

Beef Cattle.—Receipts for week 3,000 head. Market firm.

Steers	$8.00@9.00
Bulls	5.50@7.75
Cows	3.75@6.50
Dressed beef	12¾@14c.

Calf receipts 2,000 head. Market steady.

Choice	$8.50@13.00
Culls	7.00@ 8.00

Dressed Calves higher. Dressed veals, 15@19¾c.

Sheep and lamb receipts 11,300 head. Market lower.

Sheep	$3.75@5.50
Culls	5.50@6.50
Spring lambs	6.75@8.35

Hog receipts 10,400 head. Market steady. Choice, $8.60@8.75; roughs, $7.50@7.75.

VISIBLE GRAIN SUPPLY

New York, Jan. 19.—Visible supply of grain: Wheat decreased 1,392,000 bushels; in bond decreased 434,00. Corn increased 1,068,000. Oats decreased 1,006,000; in bond increased 263,000. Rye increased 9,000. Barley decreased 484,000; in bond decreased 63,000.

GRASS SEED MARKET

Toledo, O., Jan. 19.—Cloverseed.—Prime cash, and January, $9; February, $9.07½; March, $9.02½; April, $8.62½. Alsike.—Prime cash, $10.80; March, $10.90. Timothy. — Prime cash $2.47½; February $2.52½; March, $2.55.

CHICAGO HORSE MARKET

Horses were marketed too liberally last week, and after early sales at firm prices, there was a weakening in common and medium grades. Sales of horses were largely at $150@225 per head with few going as high as $265 and the better class of heavy drafters scarce and firm at $275@350. Inferior animals were poor sellers around $75@125. and farm geldings sold mainly at $140@210, with farm mares taken usually at $160@220, while some farm teams were purchased at $315@425.—F.

NEW YORK HAY MARKET.

New York City, Jan. 17, 1914.

The hay market was quiet and steady on all grades today. Receipts were 429 tons. Timothy, No. 1, $1.07½ bale; standard, $1.05 No. 2 $1.00; No. 3, 85c; clover, 65@97½c

Straw.—Straws remains generally quiet Receipts nominal. Oats straw 50@55c bale; rye 80@85c.

ELGIN BUTTER QUOTATION

Elgin, Ill., Jan. 19, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 32@32½c a pound.

TOBACCO MARKET

Tobacco growers were mystified by the operation of a strange individual of prepossessing manners who located at a leading hotel and announced thru local newspapers that he would "be able to procure tobacco growers a higher average price for future crops" and that it "is very necessary that you come at once." The stranger gave his name as R. L. Kimbrough and intimated that he was from the blue grass region of Kentucky. Interviewed as to who he represented he was non committal. He insisted that his mission was in the interest of growers but denied that he was a philanthropist. He laid great stress upon the success of Kentucky growers in pooling their interests and said that warehouses would be established and tobacco be held for better prices.

This man and his methods are at least worthy of investigation and, if found sincere of serious consideration. While it is probably true that he is a promoter working for personal interest, this by no means precludes the possibility of the worth of his plan to the growers. It is no aim of the writer to commend or condemn the man but if he has a plausible plan to better selling conditions and if this plan is modeled along lines that have been successfully followed in other sections, it is altogether possible that he should have attention. It is imperative, however that no contracts be signed until all are satisfied as to the identity and sincerity of the soliciting party.

The regular monthly meeting of the Lancaster County Tobacco Growers' Association was largely attended. Statements made there showed that but little of the new crop has been sold. Many offers of $8.50 and $9 per cwt. have been refused. In other places some sales have been made at from $8 to $10 per cwt. In one community a Wisconsin buyer paid as high as $11 per cwt for best crops. The superior quality of the new crop was generally attested by those present Stripping is now in full season and growers are also planning for the crop of the present year.

The general tobacco market was quiet and steady with a liberal inquiry for all classes of tobacco. The demand for binder leaf is urgent and unsupplied. Pennsylvania tobacco was noticeably higher and manufacturers were at a loss to know where to get supplies of this tobacco to last until the new crop is of suitable age for use.—H. J. Tweed, Jan. 19, 1914.

SAVE-THE-HORSE (Trade Mark Registered.) BOOK FREE

Why We Make a Contract to Cure

Mr. W. C. FRALEY, 502 Fisher St., Salisbury, N. C., Mar. 27, '13, writes: I used 2 bottles and cured two horses and one pony of bone spavin two years ago and they are sound as a dollar.

FOUR YEARS AFTER—STILL SOUND

Mr. H. G. PUTNAM, dealer in Coal, Danvers, Mass., Oct., 6, '13, writes: Four years ago I sent for Save-the-Horse for thoroughpin and made a cure. The horse has done a good day's work almost every day since on coal wagon.

WE ORIGINATED the plan of treating horses Under Signed Contract to Return Money if Remedy fails. You risk nothing by writing; it will cost you nothing for advice and there will be no string to it.

OUR LATEST Save-The-Horse BOOK is our 18 Years' Discoveries—Treating Every Kind Ringbone—Thoropin—SPAVIN—and ALL—Shoulder, Knee, Ankle, Hoof and Tendon Disease—Tells How to Test for Spavin; how to locate and treat 58 forms of LAMENESS—Illustrated.

OUR CHARGES for Treatment ARE MODERATE. But write and we will send our—BOOK—Sample Contract and Advice—ALL FREE to (Horse Owners and Managers—Only).

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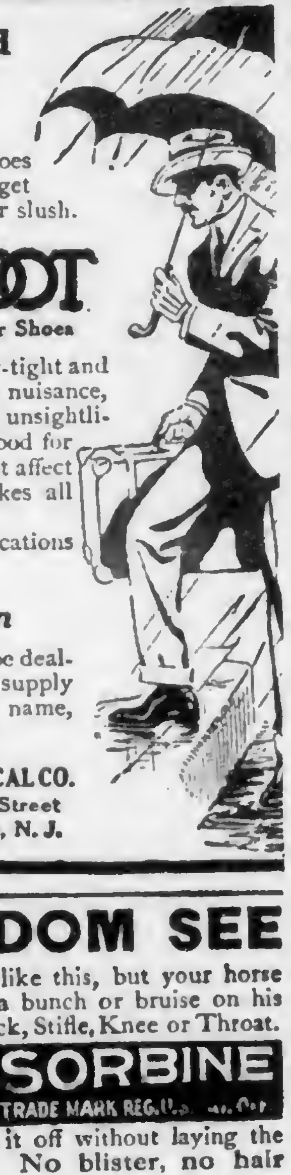

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice, and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Cow Pox.—Have a cow that has a breaking-out on bag. Some of the pimples are as large as the end of finger, and contain pus. I have given her some remedies which fail to help her. M. E. T., Bridgeville, Pa.—Give your cow a dessertspoonful of powdered nitrate of potash at a dose in feed, 2 or 3 times a day, and apply 1 part oxide of zinc and 3 parts vaseline to sores and sore parts, once a day. Another inexpensive solution that has given me splendid results is made by dissolving 4 oz. hyposulphite soda in a gallon of water and wash the udder, 5 or 6 times a day. This solution will usually check and destroy the infection. Of course, it is needless to say that this disease is readily communicated from one animal to another if the milker is careless.

Worms—Colic—Weakness.—I have a mare, 9 years old, that had an attack of colic sometime ago and was sick about three hours. While treating her for this attack, I discovered that she had worms from 6 to 8 inches long. I gave her treatment for them, but she is still unthrifty and when worked perspires very freely. She has a ravenous appetite, but appears dull and dumpish. She has been short winded for some time. C. E. W., Huntingdon, Pa.—Her teeth may need floating. Give her 1 dr. ground wormseed, ½ oz. ground gentian and 1 dr. ground nux vomica at a dose in soft feed, twice a day. Also salt her well and feed her some carrots. She should have some exercise every day and be well fed.

Urinary Ailment.—I bought a heifer at a cattle sale shortly after she had been shipped from N. Y. and examined at Lancaster Stock Yards by state authorities and pronounced sound. After I got her home, I discovered that she was passing matter or pus with a small quantity of urine. She eats fairly well but is not thriving. O. N. K., Mount Pleasant Mills, Pa.—Give your heifer 60 grains urotropin and 1 oz. of bicarbonate soda at a dose in feed, 3 times a day. Also give her 1 dr. ground nux vomica at a dose in feed, twice a day.

Cow Coughs.—I have a cow that has been troubled with a cough for sometime and I would like to know what to give her? E. E. M., Ransom, Pa.—Give her ½ oz. ground ginger, 1 oz powdered licorice and a teaspoonful muriate of ammonia at a dose in feed, 3 times a day.

Capped Elbow—Stomach Vertigo.—I have a mare 12 years old, that has swollen chest. She also has a gristle or thickened skin on elbow. I also have four pigs about three months old. They were apparently in good health when I fed them. Then they reared up and staggered back; also put their head against anything they ran into. R. M., Big Pool, Md.—Apply 1 part iodine and 10 parts fresh lard to swollen chest and elbow callous, 3 or 4 times a week. Your pigs may possibly choke or a spasm of the throat may take place and tumble them down, or they may have stomach vertigo. I suggest that you feed them warm food and arrange it so that they cannot gulp too much at a time. If they stagger, give each one 10 grains potassium bromide at a dose, 3 times a day, and enough castor oil or epsom salts to clean out their stomach and bowels.

Lameness.—I have a 9-year-old horse that has a peculiar lameness. When taken out of stable he may go sound for 5 or 6 miles, then suddenly goes lame in fore legs. His fore feet are decidedly flat. Can you tell what is laming him? E. N. R., Andover, N. J.—It is possible that the lameness comes from soreness in foot, caused by him stepping on a rolling stone, cinder, or hard substance of some kind, causing foot soreness; or, he may strike shin with opposite foot. Dissolve 1 oz. acetate of lead and 2 oz laudanum in a quart of water and apply to shin and coronet, twice a day. Also apply leather sole, filling bottom of foot with pine tar and oakum.

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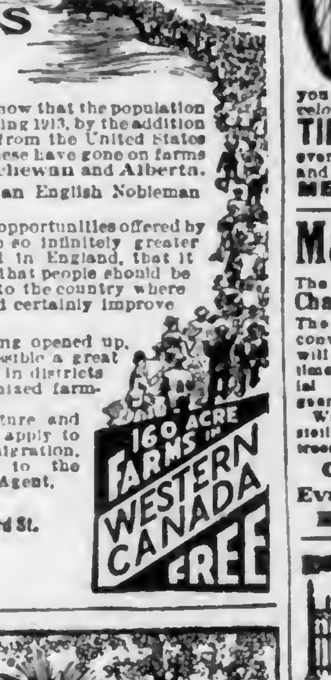

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ESTABLISHED 1880 PUBLISHED WEEKLY

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Lime and Soil Fertility.

By John H. Voorhees,
New Jersey Experiment Station.

There are several substances commonly used by farmers as manures, which produce desirable effects upon the crops, altho they are not plant foods and only act indirectly on the soil either by making it more amenable to cultivation or by bringing into action the stored-up reserves in the soil. One of the most important of these substances is lime. The use of lime is a question which confronts every farmer at some time during the year. In order to understand the problem of its usage thoroly, there are a number of factors which every farmer must understand. He must know whether he needs lime, how much he needs, what kind of lime to purchase, and when to apply it. And furthermore, a knowledge of the advantages of lime and its action upon the soil must be known.

Why Apply Lime.—The most important reason for the use of lime is, perhaps, the correction of an acid condition so commonly found in soils. Most upland plants require a sweet soil and thrive best in a soil free from acid. The application of lime is a means of creating conditions in our soils favorable to the growth of plants, and the correction of acidity is but one of the factors influencing the condition of the soil. Lime liberates plant food by aiding decay, and assists in the formation of nitrates. This has its apparent dangers and advantages. One may readily note that it is dangerous to apply lime to a soil containing large quantities of humus or organic matter when there is no crop present to use the plant food liberated from that humus or organic matter. On the other hand, it is beneficial to have some substances which will liberate plant food in the way which lime does.

In the case of soils having a liberal supply of humus, it is sometimes advisable to hasten nature's action of liberating plant food for the use of the growing plants. This is often true with market garden crops. Often the sweet potato grower makes use of this principle. Aside from these advantages, lime improves the physical and mechanical condition of the soil. Upon sandy soils its effect is to fill up the openings which make them more adherent and more retentive of moisture. On clay soils the effect of lime is still more important; the fine particles are separated and the soil made more open, porous and friable; air and water circulate more freely; the soil is warmer and easier to work.

Soils often contain numerous bacteria which aid the farmer where legumes are grown by gathering nitrogen from the air and in good soils filled with humus these minute organisms aid in transforming organic nitrogen to an available form. Conditions created by the application of lime are favorable to the spread and multiplication of these bacteria. With these numerous advantages, and importances, the problem of the application of lime becomes one worthy of consideration.

Where to Apply Lime.—In answer to the farmer's first question, whether his soil needs lime, it is known as a result of work of experiment stations, that a large proportion of our soils east of the Mississippi are in need of lime. This is so because lime is readily soluble and is washed out of soils by the drainage water aside from being used by some plants as food. But if the farmer is to answer this question himself, he must understand his soil. Then, too, there are a number of plants, most of them weeds, which thrive in acid or sour soils. Common among these are the sheep sorrel or sour grass, daisy, wild strawberry, etc. These plants are merely indications of an acid condition existing in the soil, but considerable reliance may be placed upon them. I have always felt that Joseph Wing's method of determining whether a soil needed lime was practical. Mr. Wing takes with him a bottle of muriatic acid and a tumbler. When going thru a field he will put some soil in the tumbler and add to it a small amount of muriatic acid. If lime is present in the soil, a chemical action takes place and bubbles are given off. If no lime is present in the soil, there is no chemical action and no bubbles are given off. These are, perhaps, only suggestions regarding a method to determine whether a soil needs lime.

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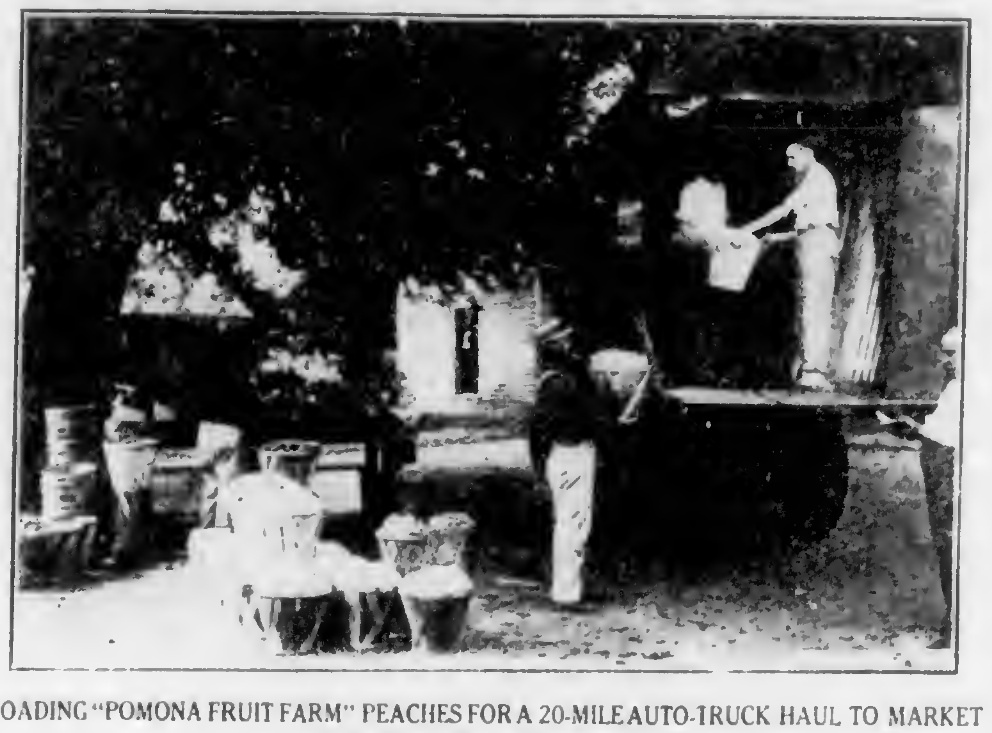

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How Much Lime to Apply.—The next question, how much lime a soil needs, is a difficult one. Laboratory tests may be made to determine how much lime is needed by any particular soil but all of us have not this acquisition, so that we must depend upon our knowledge of the soils and the statements in the preceding paragraph which are indications. Experience has shown, however, that soils of run-down farms will often require as much as three and four tons to correct acidity alone.

Kinds of Lime to Apply.—The purchase of lime will depend upon three factors at least; first, the cost of actual lime contained, delivered at the railroad station; second, the cost of handling after the lime has been delivered at the railroad station, and third, the fineness of division. I might add further that the crop to be grown and the soil, will influence slightly the answer to this question. It is further necessary to understand each of these factors upon which the purchase of lime depends. The actual lime contained will, of course, vary with the kind. I presume the best known kind of lime is that which is taken from the hills of northern New Jersey, New York, Delaware, Maryland and Pennsylvania which occurs in these states as limestone and carbonate of lime. Years ago the farmers themselves burned this lime and then slaked it with water and added it in the slaked form to the soil. This lime is on the market today as burned lime or lump lime and is, perhaps, the purest form of lime. Each 100 pounds will contain 90 pounds of actual lime, allowing for impurities.

The second kind of lime upon the market today is that which has been taken from the hills and ground by powerful machinery. One hundred pounds of this lime will contain about 50 pounds actual lime, allowing for impurities. Hence, there are two kinds of lime derived from the limestone quarries. Analogous to these kinds, we have burned oyster shell lime and ground oyster shell lime. Aside from these we have hydrated lime or the burned lime, to which water has been added. This lime is generally known as slaked lime and each hundred pounds will contain about seventy pounds of actual lime, allowing for impurities. With these figures, any farmer can determine for himself the amount of actual lime contained.

The cost of handling is a factor which every farmer must determine for himself. This will depend upon the distance from the railroad station, upon the kind of lime he is purchasing, and his facilities for spreading. Of course, the burned lime or lump lime must be slaked after reaching the farm, and this is extra labor. Some manufacturers have facilitated the use of burned lime by grinding it and calling the product ground burned limestone. This is a good form of lime but the prices [illegible] are usually too high. [illegible] lime or burned limesto

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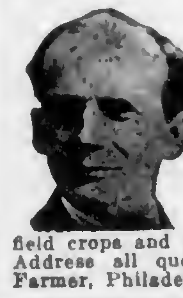
the fineness of division is usually considered good and the resulting product is quick acting, especially if the product is pure. On the other hand, there is considerable debate regarding the fineness of division of the different grades of ground limestones and their relative value. I believe that the farmer should insist upon a ground limestone, finely divided, but unfortunately, the farmer has no way to tell how fine the limestone is and must depend upon the guarantee of the man from whom he purchases.

Time of Application.—The time of application will depend largely upon the nature of the farming. The potato grower should apply lime directly after digging the potatoes and before seeding hay in a rotation of corn, potatoes and hay. The general farmer practicing a five-year rotation of corn, oats and Canada field peas, and hay or alfalfa, should apply lime directly before planting the hay or alfalfa, and the same is true with the farmer practicing a rotation of corn, oats, wheat or rye, and hay. In this case, however, the lime would precede the wheat or rye crop because it is the general practice, altho not always a good one to seed hay in the grain. With the market gardener and orchardist, the problem is slightly different. Often the labor supply will determine the time of application. The market gardener may, however, apply any form of lime during the winter provided there is some growing crop upon the soil, altho the best practice is to apply the lime to the raw soil previous to planting some crop. In such cases when lime is applied to raw soil, it should always be worked into the surface with some good farm tool.

Farm Crop Notes



By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

More Criticism

One of our leading weekly magazines quotes the London Times as saying, "the American farmer is very nearly the worst in the world," and this it says in summarizing, "in spite of the lavish expenditure of the United States on Agricultural Colleges and the exceptional advantages of soil and climate. He settles on land as locusts settle to devour everything before him, and move on." The Times is further quoted as saying, "We are told that the American farmer gets less than half of what the consumer pays for the produce they raise, while their political influence is strikingly disproportionate to their economic importance." The article pertinently points out that "agriculture is the only industry in America that is still unorganized."

The American farmer has been meekly submitting to a great deal of harsh and unjust slurring during recent years, often by those who eat their bread by the sweat of his brow. The London Times has evidently been reading some of this one-sided gossip written by ill-informed critics on this side of the Atlantic.

The American farmer has not so nearly exhausted the natural resources of the soil by wasteful methods in all the generations he has tilled it as have the men controlling the other natural resources,—coal, forests, gas, oil, iron, etc. This is not given as an excuse for the mistakes in management made by farmers, but to call attention of men engaged in other callings that when the sins of exploitation have to be answered for, the farmer may be found the least guilty of all.

The inference to be drawn from much of the criticism intended to show the incapacity of the American farmer is that he is culpably ignorant and inefficient and not able to compete with admittedly less intelligent farmers on the other side. It is often pointed out that we are producing only one-half or one-third as much per acre as is produced by many other countries, yet the fact is not noted that if these same countries had to pay American wages, as much as we do for machinery, etc., their wheat would cost them three dollars per bushel and other products in proportion. Labor is the cheapest thing they have; here land is the cheapest and labor the most costly. Men engaged in other business have so controled affairs and developed an economic system that makes other productive industries so profitable that they can pay wages that the farmer could not pay, nor could they be paid by farmers in any other nation. The greatest need the average American farmer now has in order to increase production is sufficient labor.

Farmers would be willing to pay wages equal to those paid in other vocations if their business would afford it. It is not alone because they do not know how to increase production that they can not pay them. However large or however small their yields, there is an army of go-betweens to fatten—the buyers, the wholesalers, the retailers, the manufacturers, yes, and those who lawfully gamble in the necessities of life, taking much and giving nothing, withholding from the farmer and exacting high tribute from the consumer, the profits making the boasted American fortunes and providing luxuries as well as necessities that the great majority can not have—these have developed an economic condition that must be corrected before there can be general prosperity in agriculture, no matter how expert individual farmers may become.

We recognize the truth of the last two statements of the English paper, the unjust proportion of the consumer's dollar received, and also that, as a class we have not cut much figure in politics and in the adjustment of economic affairs. Both of these conditions are largely due to the lack of organization. Self-protection demands organized effort—a unity of thought and action that will equalize profits, taxes, labor. Agriculture and all that it means, business, life, home, must be considered the unit, not individual farmers. The work must be led by leaders who are big enough, broad enough and honest enough to guard it against exploitation of outside interests.

Farmers are beginning to ask why those who are supposed to be leaders in the work of developing a better agriculture are avoiding some parts of the work that are mighty important. This question must be answered sooner or later. Tradition teaches us that real leaders, those who will be found in the work at the end, will be those who have helped in developing both individual efficiency and social co-operation.—R. P. K.

INSTITUTES IN INDIANA COUNTY.

The Institutes held in Indiana County, beginning Dec. 29, 1913 and closing Jan. 8, 1914, were a great success, both in attendance and interest. I note in the Pennsylvania Farmer, issue Jan. 10th, that a series of meetings held in eight places in Lancaster County had a total attendance of over 7,000 people. Lancaster County had 14 days of Institutes, and in Indiana the 10 days of Institutes had a total attendance of over 7,000. Each session was carefully counted by J. T. Campbell, leader of the section and S. C. George, County Chairman. The meetings and total attendance were as follows: Smicksburg, 900; Marion Center, 2,500; Willet, 1,400; Brushvalley, 1,250; Lewisville, 950. Average attendance for each session, 280.

When we take into consideration that Lancaster County is by far the richest agricultural county in the state, and has an energetic and untiring Chairman, these figures are surprising. Indiana is listed lower as an agricultural county. It is broken by steep hillsides and narrow valleys. Some of the farmers have received as much as their farms are worth for the coal and gas, and there are a number of abandoned farms. But there are a number of good farm buildings and modern homes with natural gas for light and heat. The farmers are wide awake to everything that means better agriculture. Soil fertility and dairying interest all the men. The young men and boys asked pertinent questions on these subjects. The women are interested in the home problems and poultry. There were written questions galore and each speaker was held on the floor with oral questions until full time had been consumed.

I believe from the interest taken in the silo, milking machines and feeding problems that this county is going to come to the front in dairying and hustle Bradford County to hold first place. Mr. George, the County Chairman, has his institutes well in hand. The best order prevailed. I think that I voice the sentiment of all the state workers when I say that it was ten days of strenuous work after which it was hard to say goodbye to Mr. George and Indiana County.—Leon O. VanNoy, Bradford Co., Pa.

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Horticulture

PENNSYLVANIA HORTICULTURISTS MEET

The proceedings of the 55th annual meeting of the State Horticultural Association of Pennsylvania, held in the city of York, on January 20, 21 and 22, were of unusual interest. The lack of the usual State appropriation had but little effect. The association did not have the benefit of lectures from a distance, but it had the benefit of the experience of a number of its own members, who were on the program, and of addresses and discussions, by members of the State Department of Zoology and of the faculty of the agricultural school at the Pennsylvania State College.

The use of the Court House was granted by the Commissioners of York County for the several sessions. Hon. W. T. Creasey, president of the Association, called the opening meeting to order with brief remarks, and then introduced Mayor John R. Lafean, who welcomed the association to York, R. J. Walton, first vice president, responding to his remarks.

The first business was the report of the General Fruit Committee, which was presented by the chairman, Dr. David E. Murray, of Columbia County. This report was very comprehensive, giving data and statistics concerning the fruit results in Pennsylvania in 1913. It showed that the average of yield of apples was 30 percent of a full crop. Neglect more than climatic conditions affected the yield. Poor quality has been the result of poor practice. Prices of apples in the State ranged from 25 cents a bushel to $1.25. To get the higher prices growers should endeavor to produce quality rather than quantity. It has been demonstrated that the diseases which attack the fruit can largely be prevented by spraying with lime-sulphur, either self-boiled or diluted concentrate.

Planting in 1913 increased about 5 percent over 1912. There is little danger of over-planting because the demands for good fruit are becoming more critical with each year. Quality will rule, and the poorer kinds will be eliminated from the market.

This report also showed that on account of late April and early May frosts the peach trees suffered and there was but a 15 to 20 percent crop. Elberta, Iron Mountain, Early Crawford, Champion, Oldmixon and Smock were the varieties which gave the best crops. Peaches ranged in prices from 80 cents to $1.75 per basket. The average was $1.00.

The insects most harmful in the peach orchards were the borer and curculio. The diseases most prevalent are yellows, leaf curl and brown rot. Trees affected with yellows should be destroyed at once. Leaf curl can be prevented by spraying with lime-sulphur solution (1.03 strength) just before the leaf buds open. For brown rot spray with Bordeaux mixture of the 3-4-50 formula.

Pears suffered by the late spring frosts almost as much as apples. Blight is destroying from 15 to 20 percent of the pear trees every year. There was a 10 percent crop of sweet cherries and a 60 percent crop of sour cherries. The plum crop was ruined by the late spring frosts. Grape production and nut culture are two industries almost wholly neglected in Pennsylvania.

Raspberries and blackberries were about a 20 percent crop, due to frost damage and cane blight. Strawberries gave a 40 percent yield. The report concluded as follows:

"Pennsylvania is a great state, great in every particular. We have developed her various industries. Let us now place her on the horticultural map, leading in every line of our calling. It can be done."

In discussing the report, Prof. J. P. Stewart, of State College, spoke of the Baldwin apple as being less resistant of frost than some other varieties. The Northern Spy, on account of being a late bloomer, is more likely to escape frost damage.

Dr. H. A. Surface declared that the vitality and the condition of the trees counts for much in their ability to resist frost.

P. S. Fenstermaker, of Lehigh County, claimed that elevation has much to do with the question of frost resistance.

"The Bush Fruits" was the topic presented by Prof. Walter B. Nissley, of State College, in a short talk. He expressed surprise that more attention is not given to the berry crops in Pennsylvania, which possesses soil so well adapted to them. The growing of small fruits, he said, has increased, due to the improved varieties, modern methods of handling and better shipping facilities. It is well to go back to nature in selecting a site for bush fruits. Have soil that is well-drained but retentive of moisture. Do not fertilize too heavily, as too much fertility produces too much wood growth. Prof. Nissley gave the following list of the best varieties of raspberries: Cuthbert, Loudon, Columbia and Marlboro (reds); Golden Queen (yellow); Gregg, Diamond, Eureka and Cumberland (blacks). Also, he gave the following list of blackberries: Eldorado, Snyder, Taylor, Erie and Wilson. His selections of currants are Red Cross, Perfection, Victor, Fay's Prolific, Red Cherry, Wilder and Black Champion. His gooseberry favorites are Downing, Chautauqua, Houghton, Industry and Red Jacket.

James M. Moore, of Bucks County, gave a short talk at the evening session on "Ornamental Planting for the Farm House." He spoke of the necessity of keeping the surroundings of the farm home attractive and showed what an expenditure of $50 will accomplish toward this end. The general plan outlined was as follows: Let there be a border to the farm yard. Have a good hedge around the lawn. The Japanese maple is one of the best ornamental trees. The clematis paniculata is a desirable vine for porches. For a border eight feet wide, use altheas for the background, next some medium-sized shrubbery, and then rows of peonies, iris and daisy in front.

Dr. H. A. Surface spoke on "Increasing the Quantity and Developing the Quality of Fruit," and at the close of the session showed some lantern slide views of twelve species of scale parasites that he has been observing for four years. His remarks on producing sought to show that quality does not mean large size, but freedom from blemishes, from marks of insects and the presence of color.

Prof. C. R. Orton, of State College, followed with an illustrated lecture on "Some Fruit Diseases and Their Treatment." He showed on a large screen conditions of fire blight, twig blight, body canker, collar blight, bitter rot, apple scab, cedar rust and leaf rust. For all blighted limbs and twigs and cankered conditions, he advised cutting out the affected parts, observing care as to the sterilization of the instruments used.

Howard A. Chase, of Mount Pocono, opened the proceedings of the second day by giving instructions as to "How to Plant a Tree." He produced two young apple trees, which he proceeded to prune according to his methods, giving his reasons for the different cuts. He recommended pruning so as to produce low-headed and open trees, by the elimination of central leaders and the cutting the side limbs to outer buds so as to develop a lateral growth.

C. A. Griest, of Adams County, followed with a talk on "Planting and Care of a Young Peach Orchard," laying stress on the importance of the selection of a proper location. He recommended an elevated situation with good drainage (both water and air). Peaches will succeed on any soil on which chestnut trees will grow. He advocated the "straight row" method of planting, so that the orchard can be cultivated in four directions. He advised diligence in spraying, and emphasized the efficacy of lime and sulphur as a spray.

H. F. Hershey, of Harrisburg, spoke on "Peaches for the Home Market." He recommended this list of varieties, which he gave according to their order of ripening according to his experience: Greensboro, Art Beauty, Carman, Mountain Rose, Belle of Georgia, Champion, Elberta, Late Crawford, Smock and Salway. Dr. I. H. Mayer, Lancaster County, recommended the addition of Fox's Seedling and Iron Mountain (both white peaches) to this list.

J. A. Runk, of Huntingdon, took the floor as a substitute speaker on "Some Phases of Management in the Commercial Apple Plantation." He alluded to the difficulties which confront the beginner especially the obtaining of suitable trees. Soil conditions, air, drainage and other branches of the subject in planting an orchard were considered. Frost immunity was cited as being of more importance than frost protection. As to whether too many trees are being planted, Mr. Runk expressed it as his belief that the grower of the future is

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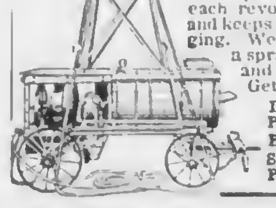

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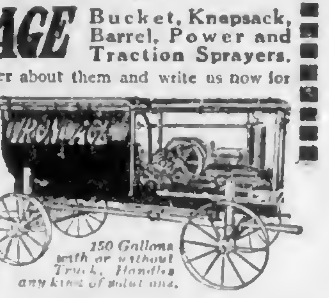

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the man who can control his crop after it has been harvested.

The opening of the "Question Box" resulted in answers to a number of questions.

"Marketing Fruit in Family Packages" was the topic of a talk by Howard A. Chase. He referred to the shipment of fruit to commission men, and the losses sustained by growers in striking a glutted market. He advocated the establishement of a "Bureau of Information and Distribution" as a branch of the Department of Agriculture of Pennsylvania, whereby the producers can be brought in touch with the buyers and consumers.

The business session Wednesday evening was open only to members. Amendments to the constitution were adopted doubling the cost of membership, which hereafter will be as follows: annual membership, $2.00; life, $20.00. The meetings are to be open only to paid-up members, their wives, daughters and minor sons, and to delegates from associations outside of Pennsylvania. The election of officers resulted as follows: president, Chester J. Tyson, Flora Dale, who was formerly secretary; vice presidents, Dr. I. H. Mayer, Willow Street; F. H. Fassett, Meshoppen; W. J. Lewis, Pittston; secretary, J. A. Runk, Huntingdon; treasurer, Edwin W. Thomas, King of Prussia.

Contributions were received for the hanging of a portrait in oil of Gabriel Hiester, a former president of the association, in the Agricultural Building of the Pennsylvania State College.

F. H. Fassett, of Meshoppen, gave a talk on "Cover Crops for the Orchard." He recommended oats as one of the best cover crops, and spoke highly, also, of the merits of hairy vetch and crimson clover. A combination crimson clover and orchard grass he declared is suitable for a hillside, to prevent washing.

D. N. Minick, of Chambersburg, read a short paper, protesting against the McKellar cold storage bills, pending in Congress, the passage of which, he said, will totally ruin the apple trade.

The "Question Box" occupied the remainder of the session.

To open the afternoon session Dr. J. P. Stewart gave "Some Points on the General Care of an Apple Orchard," and spoke of some of the diseases of apples, especially the "Baldwin Spot," which affects a number of varieties.

He then gave the following list of apples for southern Pennsylvania and the lower altitudes of central Pennsylvania:

Summer varieties—Yellow Transparent, Early Ripe, Oldenberg, and either Primate or Benoni; fall varieties—Summer Rambo, Smokehouse, Maiden's Blush; winter varieties—Grimes' Golden (on Paragon stock) Jonathan (as a filler), York Stripe, Stayman Winesap, Rome Beauty, York Imperial, Paragon; the following were recommended for northern Pennsylvania and the higher altitudes of the central counties: summer varieties—Yellow Transparent, Oldenburg, Red Astrachan; fall varieties—Wealthy, Mackintosh, Smokehouse, Opalescent; later varieties—Rome Beauty, Baldwin, Northern Spy, Stark. For Baldwin the Pewaukee can be substituted.

W. J. Lewis, of Pittston, who has 87 varieties of apples in his orchards, stated that according to his experience hardly any varieties are exempt from the "Baldwin Spot."

Prof. F. N. Fagan, of the Pennsylvania State College followed in an address on "Selecting and Keeping Exhibition Fruit." The specimens should be fair types of the soil and locality in which grown, said Prof Fagan. Attention should be given to uniformity of size and shape, as well as to color. The careful handling of the fruit is an important matter. Until the time of the exhibition the fruit should be kept at an even temperature.

The Committee on Resolutions—F. H. Fassett, Cyrus T. Fox, A. I. Weidner, W. J. Lewis and George H. Bartram—reported late in the afternoon.

The resolutions commend the Department of Agriculture and its Division of Zoology for its important work in the cause of horticulture; extol the Pennsylvania State College; express disapproval of the portion of the new law of weights and measures which fixes the weight of a supposed bushel of apples at a greater figure than the actual weight of a full bushel; recommend suitable regulation by law of the commission business in agricultural products; request the Department of Agriculture to prepare a bulletin on the utilization of waste orchard fruits; and convey the thanks of the association to the York Chamber of Commerce and the Mayor of the city for favors conferred and to the press for the excellent reports of the proceedings.

At the evening session Prof. A. W. Gilbert, of Ithaca, N. Y., delivered an illustrated lecture on "Some Plant Breeding Lessons," and gave views of the production of vegetables, plants and flowers under glass.

Professor R. L. Watts, Dean of Agriculture at State College, delivered the closing address. His subject was "Agricultural Education." He reviewed some of the work of the State College, and spoke of agricultural instruction work in the public schools.

Two special sessions for vegetable growers were held at the Colonial Hotel, Wednesday, January 21st. At the morning session Prof. W. B. Nissely of State College spoke on "Some Special Problems" and H. C. Thompson, of the Bureau of Plant Industry, Washington, D. C., on "The Use of Muck Soil in Vegetable Forcing." In the afternoon, Mr. A. M. Seabrook, of Bridgeton, N. J., discussed "Irrigation as a Factor in Vegetable Growing," followed by a round table on vegetable varieties conducted by Dean R. L. Watts, of State College.

The fruit show in the Coliseum Building was most creditable, considering the fact that no cash premiums were awarded. A fine display of Stark Delicious apples by the Stark Bros Orchards and Nurseries Company was a very attractive feature. The Perry County Fruit Growers' Association won first prize for the best county association exhibit. The Adams County Society was a close second. There were sixteen classes and many individual exhibits, representing a number of counties of the State. H. M. Keller, of Gettysburg, won the prize for the best collection of five barrels of apples, any one commercial variety. He exhibited Staymen Winesap. He also won first premium for the best barrel of this variety. G. P. Myers, of Aspers, took first prize for the best barrel of York Imperials, with Kauffman & Sons, of York, second.—Cyrus T. Fox, Berks Co., Pa.

Renovating Apple Trees.—The question of renovating old apple trees is being given considerable attention all over New Jersey. Most of New Jersey's farms have orchards of dilapidated apple trees, some of which have passed the century mark. These trees in themselves are practically worthless so far as the fruit they produce is concerned, but under the proper treatment they could be restored to a state of profit again and be enabled to produce much good fruit. The sod about them should be plowed. Then the trunks should be lightly scraped to remove the loose, shaggy bark. Next cut out the dead and diseased wood, and give the tree a light pruning, after which heavily manure the land. The next step in this process of renovation is to give the tree a thoro spraying of lime-sulphur wash or a soluble oil solution. Whenever this treatment has been given, it has been found that the health of the tree has been wonderfully increased, but of course, since the trees are apt to belong to some obsolete variety, it is a good plan to topgraft the larger limbs with desirable varieties. The grafting process is not to be performed until spring, but the scions should be cut now. In cutting grafts, take pieces of wood from 6 to 12 inches long, of this season's growth from bearing branches of trees known for their desirable sorts and productiveness, and store them in barrels of sand placed in the cellar. Grafting should be well and carefully done, and if one is not acquainted with the process, an expert would better be employed. Then good results must be patiently awaited. One of the best known scientific apple growers of New Jersey, emphasizes the fact that it sometimes takes three years to rid an old, unsprayed orchard of the different pests. He states further that many orchardists look for results the first year, but that this is impossible, since only a beginning of the fight against insects and diseases has been made in that time.—D. T. Hendrickson, Monmouth County, New Jersey.

Imported Cabbage Worm and Cabbage Aphis.—A circular on this topic, No. 28, of the Montana Station should be of interest to many farmers of this and other states who are troubled with these almost universal cabbage pests. This circular gives descriptions of these pests and their injuries to the plant, with illustrations showing them in their different forms, and then outlines control measures. The Bulletin is mailed from Bozeman, Mont.

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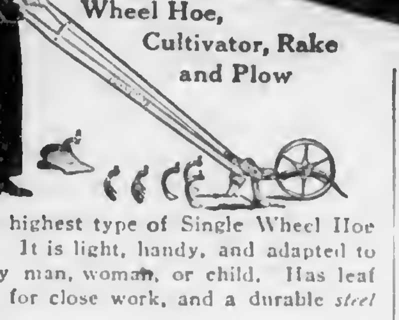

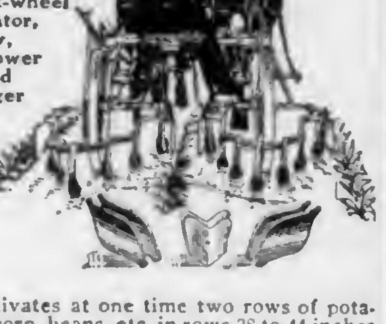

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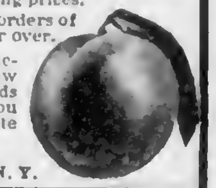

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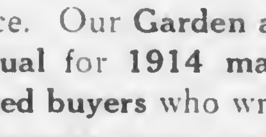

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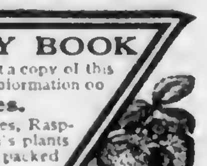

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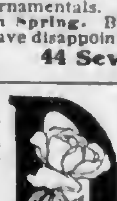

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The Dairy

FORAGE CROPS FOR THE DAIRY FARM

(Third Prize Article)

Dairy feeds are expensive to buy at present prices and prospects are for still higher rates. Feed bills eat a large hole in dairy profits. The best way to conquer this condition is to grow such feeds as can be grown on the farm which will go the farthest toward making up a balanced ration for the dairy cow, with the smallest possible outlay for purchased feeds.

To do this the silo and growing of alfalfa will be found two important factors. I think one is about as important as the other. The silo furnishes one of the best known dairy feeds at present. Besides providing the most profitable way of handling the corn crop, it furnishes a palatable and succulent feed for the dairy cow. On account of its succulent qualities, silage keeps the bowels of the dairy cow in good order. Without silage, bran or oil meal is used largely to perform this function. Both of these are expensive feeds to buy, and run up the feed bill rapidly if fed to any extent. This fact alone makes silage an important home-grown dairy feed.

Another important factor in favor of silage is that it can be held for feeding during the summer and fall months, and makes a most excellent substitutes for the green pastures which are generally found waning more or less at this time. There is something peculiar about silage. It is more palatable to stock, and gives better results than feeding green corn from the field during the fall when pastures are short. I fed silage to my cows all thru the drouth last summer. Some mill feeds were fed with it to furnish protein and balance the ration. Had I had plenty of alfalfa hay to feed with the silage, a considerable portion of my mill feed bills could have been eliminated.

Protein is the element generally lacking in home-grown rations. Plenty of good alfalfa hay will go a great way toward furnishing this important element, and avoid purchasing large quantities in mill feeds, as it contains about 11 percent of digestible protein. Few farmers realize that soy bean hay contains about the same amount of digestible protein as alfalfa hay. Oat and pea hay is another containing about half as much. The main trouble is that many of us farmers have silage to feed, but not any of the high protein hays mentioned to balance the silage with protein as much as possible. We have to get the necessary protein from some source and so have been buying it in mill feeds.

A 1,000-pound cow giving about thirty pounds of fairly rich milk is supposed to require a daily ration which will furnish her about twenty-five pounds of dry matter, two and one-half pounds of protein and about thirteen pounds of carbohydrates. To show how near we can approach a balanced ration for dairy cows by having plenty of silage and alfalfa hay, or other legume hay containing a similar amount of protein, I have compounded the following ration. This ration is for a 1,000 pound cow. For smaller or larger cows the ration can be varied about one-tenth for every 100 pounds difference in weight, either way.

lbs.	Dry Matter lbs.	Dig. Pro. lbs.	Dig. Carb. lbs.
40 corn silage	8.40	.36	5.16
15 alfalfa hay	13.80	1.65	6.34
2 corn and cobmeal	1.70	.08	1.20
1 cottonseed meal .	.92	.37	.17
	24.82	2.46	12.87
Standard ration	25.00	2.50	13.00

Only two pounds of corn-and-cob-meal and one pound of cottonseed were required in addition to the silage and alfalfa hay to bring the above ration within a very small fraction of the standard. Most farmers who have silage to feed have some corn besides, only a small amount of which would be required to furnish the amount of corn-and-cob-meal called for in the ration for a good size dairy. It is probable that if the silage was made from well-eared and well-matured corn that the two pounds of corn-and-cob-meal could be left out on account of a larger amount of corn in the silage. The above ration is based on medium grade silage.

In the above ration only the one pound of cottonseed meal is supposed to be purchased. For a dairy of fourteen cows on full feed, only about one-hundred pounds of this would be required per week. The cost would be only a fraction of the cost of mill feeds purchased by many farmers for a dairy of this size where plenty of alfalfa or other legume is not available to form part of the ration. Cottonseed meal was used in the ration mostly to help balance the shortage of protein. It will be noticed that the alfalfa hay alone furnishes about two-thirds of the protein called for.

All dairy farmers should recognize the great feeding value of legume hays. More or less nitrogen is stored in the soil where legumes are grown, and the land is greatly benefitted. Common red clover is a valuable legume, but contains only about two-thirds as much digestible protein as the other three legume hays mentioned above. Where alfalfa can be grown it is the leader of the legume hays, in that much larger amounts can be grown per acre on account of its tendency to grow several crops in one season.

When protein must be purchased, cottonseed meal is the cheapest form. There is an opinion among some farmers that it is not a safe feed for cows. At the Connecticut Agricultural College it has been fed continuously for many years, and no bad results have been detected. Some received as much as six pounds per day of this meal, and were never off feed.—C. R. Weidle, Erie Co., Pa.

ROTATIONS FOR DAIRY FARMS

The success of many a dairy herd is more dependent upon the ability of the owner to raise food crops than upon the ability of the cows as heavy producers. Economical substitution of home-grown foods must be practiced to meet the present prohibitive prices of grain and by-product feedstuffs.

In our efforts to produce better home-grown foods we find that the questions of feed and fertility are, in a measure interdependent; that is, the more fertile the land the larger the crops, and the more cows can be kept and the more manure will be made. The growing of food crops brings more land under a profitable system of crop production, and this means better crop rotations, better cultivation, the constant occupation of the soil and a consequent natural increase in fertility.

Growing suitable food crops for the cows also helps build soil fertility. It is true that the more rich feeds there are purchased and fed the more fertility is added to the farm to balance up whatever may be removed in the sale of dairy products. On the other hand, the man who grows clover, alfalfa and other legume crops adds nitrogen to his soil as well as to his dairy foods, and the soil will gain materially in fertility provided provision is made to balance up the farm manure with phosphorus and potassium. In addition to furnishing nitrogen, both to the dairy foods and the soil, the legume crops are active factors in stimulating the activity of soil organisms which help to release insoluble mineral elements that otherwise would be unavailable to growing crops.

The man who has good pasture land is fortunate, altho it is possible to establish pasture by seeding with a variety of grasses that will yield feed thruout the season. Such a pasture will require several years to become well established. The weeds must be kept down and grass seeds sown on thin spots. Where the seeding is thin and run out in spots I have secured good results by applying 30 bushels of lime, 300 pounds of acid phosphate and 100 pounds of sulphate of potash to the acre, disking thoroly and seeding mixed grass seeds for several years. I think it is better to seed the grasses several times than to apply the seed all at one time.

In reference to growing food crops I have confined all of my efforts to such standard crops as clover, alfalfa, oats and peas and corn. The more we can raise of these crops the better. With these crops a man can run his herd and buy very little grain, and that only of the most concentrated sort. In growing food for cows that are producing market milk, I practice a four-year rotation of corn, oats and peas, clover and timothy. Some prefer the three-year rotation and leave out the timothy, but on account of the uncertainties of the clover crop I prefer the mixed mowings and allow them to occupy the land two years. This gives an ideal place for the farm manure and furnishes a better base of humus to work with.

DE LAVAL
Butter Triumphs as Usual At National Dairy Show

BUTTER made from cream separated by De Laval Separators made the usual clean sweep of all highest awards at the great 1913 Chicago National Dairy Show and Annual Convention of the National Buttermakers' Association, just as it has always done every year since the organization of the National Association in 1892.

Whole Milk Creamery Butter. The highest score in this class was awarded to O. N. Peterson, of Rapidan, Minn., a De Laval user, as were 187 out of the 200 whole milk creamery entries.

Gathered Cream Creamery Butter. The highest score in the gathered cream factory-made butter class was given R. O. Brye, of the Readstown Creamery Co, Readstown, Wis, this prize-winning butter being made from the cream of farm patrons all using De Laval Separators.

Farm Dairy Butter. The highest score in this class was awarded to Mrs. D. H. Turnbull, of Monmouth, Ill., whose family has been using De Laval Cream Separators for over twenty years.

De Laval Superiority Indisputable. The evidence of the superiority of De Laval cream and butter as demonstrated by the winning of all highest awards the world over for thirty years, is so overwhelming as to be indisputable and unanswerable. A De Laval catalog, to be had for the asking, will make plain the reasons for it.

THE DE LAVAL SEPARATOR CO.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE

Feed Sweet Succulent Corn Until the Silo's Empty

You can keep your ensilage as fresh, sweet, succulent and palatable as the day the corn was cut—preserve it in perfect condition right down to the last forkful—if you have a

Natco Imperishable Silo

Built of vitrified clay hollow blocks; its glazed surfaces exclude air and moisture. The two dead air spaces protect contents from heat and cold. Each layer of blocks is reinforced by continuous steel bands.

Weatherproof—Decayproof—Verminproof—Fireproof

The Natco Imperishable Silo will last for generations—any mason can erect it—never needs painting—no staves to warp or shrink—no hoops to tighten—no repair bills—the first cost is the only cost.

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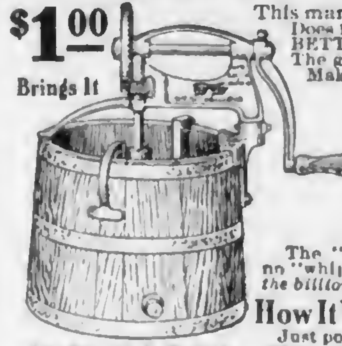
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Use the "Fayway"—Get More and Better Butter
Stop Old-Fashioned, Wasteful Churning!

$1.00 Brings It

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Revolutionizes Butter Making!

Fayway Butter Separator

The "Fayway" System produces butter by an entirely different process—no "whipping" or "beating" with paddles or blades. A stream of air blows the billions of butter globules to the top—gets ALL the butter-fat!

Made in 3 Sizes

How It Works Just pour in the cream, turn the crank a few minutes and—presto!—there's the butter! Actually fun to make butter with the "Fayway"—all drudgery abolished!

Amazing Results "Fayway" butter has a beautiful waxy texture. Tastes better, keeps longer, brings 5c to 10c more per pound than ordinary "churned" butter, and you get more of it.

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We don't ask you to take our word. We want you to SEE with your own EYES how the "Fayway" makes butter. Send for our $1.00 Deposit Plan on which we will ship this amazing machine for a free trial in your own home. If it doesn't do exactly what we claim, back comes your dollar! Don't send any money, but

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This book tells all about the FAYWAY the greatest invention since the cream separator was brought out. Let us tell you about Fayway Butter Clubs.

THE BLANTON & McKAY CO., 437 Carr Street, Cincinnati, Ohio

Alfalfa helps out wonderfully in balancing up the rations. It will succeed almost anywhere that red clover will. Lime, drainage and humus will overcome most of the troubles and put the land in shape for this crop. I have secured a good stand on ten acres. It requires patience and perseverance to grow alfalfa, but it is worth trying for.

Corn silage is the best succulent food we can raise. It is not necessary to discuss this food further than this: You and I know that in the summer we can not get a heavy milk yield if we feed timothy hay, and yet a chemist will analyze grass and cured timothy and find that they are the same thing, only more water is in one and the proportions slightly different. You and I know the value of them as a food. The man who, during six months of the year depends upon dry timothy hay, does not get enough succulence, does not get that element which is in the grass, unless he has some kind of succulent food, and there is no succulent food that one can raise as cheaply as silage from matured corn, sowed thin, cultivated cheaply and stored properly. A silo will pay for itself the first year, in the excess of food value obtained by taking care of the corn in that way against the ordinary method of caring for it. One can not afford to lose sight of succulent food in making up dairy rations.

We should strive to improve our standard feed crops before trying to find new crops to take their places in the rations and rotations. There is as much difference in the quality and value of home-grown foods as in the feeds of commerce, and it should be our aim to grow, harvest and feed these crops in the best possible condition. Those crops which should be grown on the farm to build up fertility produce a class of feed needed to balance up the ration for milk production. In short, we must provide some kind of succulent food thruout the year, cheapen the cost of protein and increase the fertility of the soil. If we are to grow better feed and fertility crops, as I see it, we must grow better corn, clover, alfalfa, oats, and peas; the mixed grain crop, clover and alfalfa to take the place of grain foods and give us cheaper protein.

This brings up another question. Our home-grown feeds are bulky. There is a limit to the capacity of the cow's stomach and the energy she must employ in keeping it working. If we choke the machine we cut down its capacity. To reach the digestive and assimilative capacity of our cows they must be furnished with the required amount of fats, carbohydrates and protein in about the right proportions. The excessive amount of dry matter contained in our standard food crops renders it impossible, without the aid of concentrated feeds, like linseed oil meal, cottonseed meal and similar food, to reach the digestive and assimilative capacity of the cows. In other words, the cow is not capable of eating, digesting and assimilating a sufficient quantity of these domestic feeds to enable her to produce a maximum flow of milk.—W. Milton Kelly, Erie Co., N. Y.

THE COST OF RAISING A DAIRY COW

One of the most important and vital problems in the dairy industry is the production of heifers to replace poor animals and the older cows as they reach the end of their economic usefulness. Bulletin 49 of the Bureau of Plant Industry says that there are in this country, not including the Philippine Islands, 21,749,651 dairy cows. Considering the average productive life to be even as high as eight years, each year 2,718,706 heifers must be raised to maintain the present number of dairy cows. If the total number of cows is increased, then even a larger number of heifers must be raised annually.

The raising of these heifers for the country as a whole is an important economic problem to the dairyman, and the cost of their production is a large item in keeping down his profits. In the new bulletin is outlined the cost problem of raising a heifer, and figures are presented showing the results of investigations into the cost of producing heifers on a Wisconsin farm, covering a period of five years. During this period 117 Jersey calves were selected for raising. While the cost of raising dairy cows of the different breeds may not vary greatly, the Jersey is one of the smallest breeds; and if there is any variation the cost for the other breeds would probably be a little higher.

In computing the cost of producing a dairy heifer consideration has been

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Easy to Clean
Easy to Keep Clean

"They are easy to take care of," writes one SHARPLES MILKER user, whose name we will be glad to furnish on request. "When we get through milking we milk a pail of water through them, the machine is cleansed in water about scalding, then placed in a solution of lime water.

"The machines do not hurt the cows. We have used them eighteen months. To anyone in the dairy business I would recommend them. We are milking around seventy cows daily in an hour and ten minutes. We use five units.

"One man attends to the milkers and another man strips the cows. The cows like it better than hand milking and it does away with the labor problem. I had to keep eight and nine men on my farm, but after pay day we might have one or two to do the milking. It just made things hum for the foreman and one or two men that would be regularly on the job. Now we are under no obligations to them. Everything works smoothly and there is no friction among the men picking out the easy milkers and all those stunts."

The SHARPLES MILKER now is being used in dairies of from 15 to 700 cows. Built sturdily, its operation is alsolutely reliable.

Ask the editor of any national authoritative dairying paper what *he* thinks of the SHARPLES MILKER.

Catalog on request.

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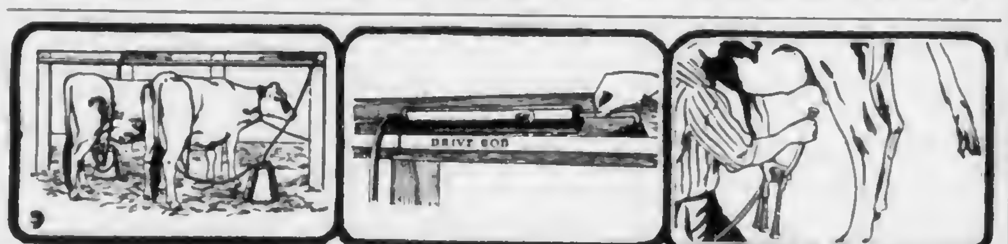

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Change the cover. Don't stop the machines milking—that would be a loss of time. Weigh and record each cow's milk—that's the Hinman way. Everything runs smoothly and silently. The first you know the milking is over.

The HINMAN Milker

Don't think that the Hinman is made only for the big farmers. It's a money maker for dairies of all sizes from 10 to 400. Every owner will tell you proudly "It's a Hinman." They milk every time—always on the job. Cheaper than hired help.

Milking in Silence Means Dollars

Cow-contentment and thoroughly scientific milking make the big records. That's why such dairymen as Jno. Garrow, Morenci, Mich., uses the HINMAN when putting his heifers through the advanced registry.

A few of the many features found only in the Hinman. Each machine separate; no vacuum in pail, rapid-pail-changing idea, visible milk flow; no piping—just a simple drive rod; only two moving parts.

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TO BE CONTINUED—WATCH THE ARROW.

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For 15 years the One Best Silo. Big, sensational improvements this year, making the Harder Silo better than ever. Of massive strength, anchored fast, solid as an oak, perfect fitting doors, highest grade material and construction—perfect in every detail—that's the Harder Silo.

More durable, less expensive, than concrete and tile.

The kind "Uncle Sam" uses. Big free catalog describes the new spline-dowel, the new intermediate ladder rung, the anchor, and scores of other distinctive features. It tells why you need a Harder Silo. Write today.

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AMERICAN CREAM SEPARATOR

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Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address:

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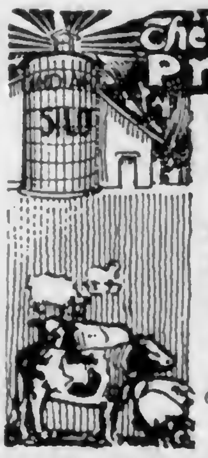
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Heifer calves, high grades 7-8 Holsteins, $15 each, crated on cars Tully, 1 week old, express paid if 5 or more ordered at one time. Registered and high grade cows; also registered bulls. Branch address: Plumlyn Farm, Fairview Village, Pa.
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Holstein Friesian Cattle. Royal breeding. Get A. R. O. bull calves. Write HOME FARM, Center Valley Pa.

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One pound of molasses to ten pounds of feed increases efficiency of ration 25 per cent. Try it. Cut price $7.00 per barrel (56 gallons), f. o. b. Pennsylvania Factory. You take no risk—money back if not satisfied after feeding half a barrel. Order quick. WATTLES & COMPANY, Box 22 Litchfield, Michigan

given to such items as feed, bedding, labor (both man and horse), shelter, use of equipment, interest on money invested, miscellaneous charges (including veterinary services, registration fees, and other minor items), a share of the general overhead expenses of the entire farm business, and a charge to cover losses by death and discarding. To these must be added the item of initial value, because a calf worth raising has a value at birth.

Summarizing the results obtained by experiments and observations, it was found: That the average net cost of a dairy heifer 1 year old is $39.52, which consists of its initial value, $7.04; feed, $24.67; labor, $4.45; other costs, $6.36; total, $42.52; creadit for manure, $3. The average net cost of a dairy heifer 2 years old is $61.41, which consists of its initial value, $7.04; feed, $40.83; labor, $7.81; other costs, $13.73; total, $69.41; credit for manure, $8.

The most important item of cost is the feed, which is 65.5 percent, or nearly two-thirds of the total cost of the heifer. Labor forms 12.5 percent, and all other costs 17.5 percent. One-half of the feed cost the first year and one-third for the full two years is for the whole and skim milk. By far the most expensive period in the life of the calf is the first four weeks, the cost being nearly double that for any other four-week period. This high cost is occasioned by its being dependent almost entirely upon whole milk. The man labor required in raising a heifer is about 40 hours during the first year and 23 hours the second year. The total cost of man and horse labor for the two years is close to $8. The manure produced during the two years has been valued at $8, consequently, the cost of labor is practically offset by the value of the manure.

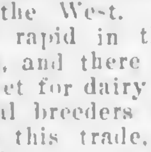
If the cost of raising a dairy heifer on the Wisconsin farm is typical thruout the dairy regions, the usual price received for such heifers will not pay the cost of producing them. This is especially true of a heifer sold at one year of age. The investigations of the cost of producing a dairy heifer seem to indicate that a heifer entering the dairy herd at 2 years of age must be worth at least $60 to cover cost only. A farmer cannot afford to raise a heifer that will not sell for more than $60 at 2 years of age.

PENNSYLVANIA HOLSTEINS TO MONTANA

Mr. H. C. Reinhold, one of the leading Holstein breeders of Lancaster County, Pa., recently shipped two carloads of registered Holsteins to a breeder at Helena, Montana. The cattle reached their destination in excellent condition. A notable feature was that four calves were born during the journey, and all were saved in good condition. The western breeder is convinced that Pennsylvania has registered Holsteins lower in price, commercial value and pedigree considered, than any other state in the Union. His experience with the Lancaster County shipment has further strengthened his conviction; and the freight was but little higher than from such middlewestern states as Wisconsin, Illinois, etc.

This bears out the claims of Prof. VanPelt, of Iowa, who, in recent lectures in the East, has advocated greater attention by eastern breeders to the markets for purebred dairy cattle thruout the West. Dairy expansion has been rapid in the former range sections, and there is a big and growing market for dairy cattle of quality. Invidual breeders will do well to cultivate this trade, and communities of breeders in the East may find a good outlet for surplus stock.

Standard Seeds.—The 1914 catalog of Stokes' Standard Seeds is bigger and better than ever before. It lists a complete line of seeds for the truck garden and general farm. Do not make up your list of spring seed purchases without examining this catalog. It is free upon request. Address Walter P. Stokes, 219 Market Street, Philadelphia, Pa., and ask for Catalog 43.



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This cut shows our big size 5½. Skims 550 to 600 lbs. of milk per hour. Has easy cleaning, one piece Aluminum skimming device, low tank and frictionless pivot ball bearing. Terms only $2 down and small monthly payments.

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Send for pedigree and price.
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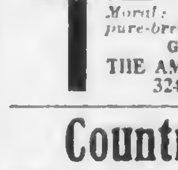
Holstein Cattle of the most fashionable breeding. Bull calves only for sale. B. F. JONES, South Montrose, Pa.



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BREEDERS OF BRED TO LAY
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Book your orders now for Hatching Eggs, Chicks and Ducklings.
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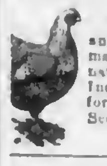

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Poultry

INCREASING EGG LAYING TENDENCY

Most of us want eggs summer and winter, all we can persuade the hen to lay. On some farms poultry is considered a necessary evil instead of a profitable source of income but the one who is in poultry work for profit wants a strain that will lay eleven months out of the year. It is possible to have such a strain if one goes about it in the right way.

To take a lot of mongrels and endeavor to breed so that the strain will be built up is a very slow and difficult undertaking. It would be better to sell all the old lot and get a fresh start, even if the proceeds would buy only a very small pen of a laying strain of purebred stock. It takes many years to build up a good laying strain and much care and effort. The hen in her wild state laid only a few eggs and then hatched them and raised the family, which was the natural instinct. The greatest layers have been taken out year after year and used in the breeding pens, resulting in a little better laying strain each season. Sometimes this rule meets with the reverse as in some experiments that were conducted at the Maine Experiment Station. As a general rule, however, it works well. A few years ago the 200-egg hen was thought impossible but that mark has been passed many times and a hen at the Oregon Experiment Station recently produced almost 300 eggs in twelve months.

This law of selection is a very important one to the man who tries to produce eggs the year around. It is a very simple law and consists in reserving year after year a few of the very best layers, which also have the general qualifications of the breed, and using them for breeding purposes. A small pen of 5 or 6 two-year old hens should be mated with a two-year old male, this to be from the highest record laying hen, characteristic of the breed used.

This work of increasing the yield is a very interesting study and can be practiced by any one who is a close observer of his flock. It is not absolutely essential to have trap nests but of course it would be better. One can soon have some idea which are the best layers in a pen of 5 or 6 hens and these can be set aside at the end of the pullet year for the breeding pen for the next year's work.

I have not been surprised to find that it is not always the largest hens that lay the most eggs. It has been shown that the medium-sized hen is the greatest egg producer. Of course, this rule does not always hold true, for now and then exceptions come to view but I always like the medium-sized hen as a breeder. The large-sized birds are apt to be more docile. The majority of the large-sized hens in my observation have not been as good layers as the medium-sized hen for the breed in question.

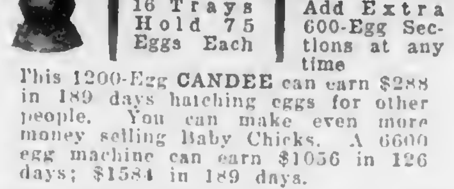
I would not use the small-sized hen for breeding purposes but would try to have as uniform a flock as possible, as to size, color and shape. The small-sized hen is not fit for the breeding pen because she is usually one that has been late hatched, or in some way stunted in her growth.

If one uses such care as is here indicated in making up the breeding pen each season, a flock of better layers ought to be secured. Each year this careful selection should be made with the idea in view of bettering the laying tendency of any breed of hens. In some parts of Kansas eggs are bought by the pound. Some day in the near future all markets will be selling eggs by weight, which will demand another line of breeding to produce larger eggs.—C. C. McCurdy, Crawford County, Pa.

TO CORRECT EGG EATING

We are in receipt of a letter from Luzerne County containing a poultry pointer which we give to our readers as we got it. Our correspondent informs us that feeding fowls corn meal mixed with vinegar will prevent or correct the habit of egg eating.

Poultry Facts.—The Maine Experiment Station, Orono, Me., has just issued its Bulletin 216, which gives enlightening information on some phases of poultry lines not generally known or experimented with.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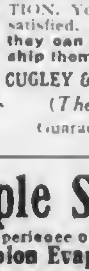

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J. C. Reefer, the poultry expert of 1605 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every batch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

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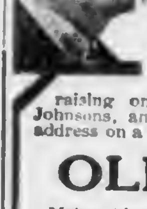

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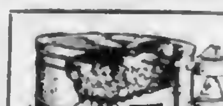

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ESTABLISHED 1880 PUBLISHED WEEKLY

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Philadelphia, Pa., February 7, 1914.

Board of Agriculture

The meeting of the State Board of Agriculture at Harrisburg last week developed more interest in the actual every-day problems of agriculture in this state than any previous meeting. Secretary Critchfield planned the program so as to bring the heads of the various state departments before the board to tell what each was doing in matters affecting rural life and affairs. The result was that every phase of agricultural interest in which the State Board of Agriculture, as an advisory branch of the state government and official representative of the farmers of the state, is concerned was brought prominently before the members. State appropriations, roads and taxation were most prominent in the discussion. Governor Tener brought the road problem to the front in his opening remarks by calling for suggestions as to ways and means of financing road building. Incidentally the Governor offered the key to what seems the best practical solution of the problem by pointing out that the last legislature appropriated something like $20,000,000 to charities. A motion was passed providing for the co-operation of the State Board of Agriculture with the State Board of Public Charities in an effort to bring about an adjustment of appropriations. If this line of policy is followed out and a sincere effort is made to prune the list of charities that receive state aid, the present revenue will yield enough money to build roads, improve and maintain the earth roads and care for schools and all state institutions having just claims for state aid. It will not be an easy matter to compel the legislators to abandon the old policy of currying favor with home institutions by securing for them all the state aid possible, but when the public is convinced that the pruning is justified there will be such popular support for the plan that no log-rolling legislator will dare oppose it. Certainly there is no well-informed public sentiment demanding that one-fourth of the state revenue be devoted to charity. The State Board of Agriculture can be a real force in this issue and if the spirit manifested in the Harrisburg meeting animates the preparation for the spring meetings of the Board there ought to be helpful results. But the road problem can not be solved merely by appropriating more money. Dr. McCaskey, whose articles on earth road building in Pennsylvania Farmer are attracting wide attention, accepted the Governor's invitation for suggestions and made a plea for a constructive plan of earth road maintenance thru a system of King drag patrol. He advocated a system of demonstration roads in every township of the state under the supervision of the State Highway Department in much the same way that the State Board of Agriculture conducts farmers' institutes thruout the state. Unfortunately there was little opportunity found for the discussion of his suggestions, and no action was taken upon it. It must be evident to the Board, as it is to every citizen giving attention to the road situation in the state, that there must be definite plans for improvement of all roads before there is great need of increased appropriations. It is to be hoped that the Board will take up the construction end as well as the financial end of the road problem at future meetings. Taxation problems were side tracked for the discussion of appropriations and roads, but needs of revision to do away with inequalities in the present system were recognized. The entire meeting opened many ways in which the Board can be useful in helping to meet the economic needs of the farmers. The next meeting, coming at the opening of the campaign for election of legislators, should set before the public some very definite issues. A complete report of the recent meeting and a review of Dr. McCaskey's road plan will be published in next week's issue.

Carrier Outfits

A bill has been introduced in Congress to reimburse rural delivery carriers for expenses incurred in providing and maintaining their equipment used in carrying the mails. This is a feature in the development of the rural mail service which should have the support of every rural delivery patron. Under present regulations each carrier is required to provide his own outfit and maintain it out of his yearly salary. Previous to the introduction of the parcel post service this arrangement was made to serve well enough, inasmuch as the amount of mail carried per day was fairly uniform thruout the year and routes were so arranged as to avoid excessive loading. With the growth of the parcel post business, however, and more particularly since the weight limits have been increased to 50 pounds, it is imperative that the carriers be provided with conveyances that will adequately care for increased weight of mail. To require handling heavier loads the carriers can longer provide such outfits. The salaries now in force were established on the basis of service before parcel post was inaugurated and do not cover the increased work required in handling the added package mail. To require handling heavier loads and maintain the greater expense on such equipment is merely adding to a burden already out of proportion to the wages received. Country people generally are vitally interested in everything looking to the improvement of the rural delivery service. They have shown that they are appreciative of the advantages of the parcel post. They want the greatest possible development of that service. To this end they should give their support to a movement providing for proper equipment for carrying the rural mail and just reimbursement to the carriers. Automobile and trolley conveyance for the collection and distribution of city mail is provided, and many city carriers are equipped with conveyances for carrying mail. The rural carriers should be as well cared for in the performance of their duties. The new bill provides that carriers be allowed an amount equal to 25 percent of their monthly salaries for equipment and maintenance. Whether or not this is sufficient to provide the equipment necessary is a matter of detail to be worked out by the postal authorities.

Office of Marketing

Washington correspondents recently reported that Secretary Houston refused to sanction a request for $1,000,000 for the use of the Department of Agriculture in creating a bureau of marketing. He favored reducing the request to about $200,000, and declared that the latter amount ought to prove sufficient to meet the needs. The spectacle of the head of a government department refusing a large appropriation is sufficiently unique to attract attention. The more common practice appears to be for the department heads to ask for all they dare hope for and take all they can get whether they have definite plans for wise expenditures of it or not. But Secretary Houston appears to have well-laid plans as well as the temerity to refuse large appropriations. He demonstrated his general grasp of the agricultural situation in spite of lack of previous training or experience in agricultural affairs, when he declared early in his administration that the problem of economic marketing of farm crops, and the return to the farm of a larger proportion of the purchaser's price was of more immediate concern than increased production. He is letting it be understood that he does not underestimate the necessity of increased production or the utilization of a larger acreage in the production of farm crops, but he recognizes the results of better marketing systems as a means to these ends. And he appears to have personal views on the best and safest ways of working out a general marketing system. He does not favor a market bureau in his department, and hence does not want the big appropriation necessary for the establishment of such an agency. He intimates that his completed plans, which are to be announced later, contemplate rather the utilization of all of the machinery now in existence under the supervision of the department in a general market system. He says: "There must be co-operation with many other agencies. We do not want to establish an agency with an exclusive field or with barriers erected to prevent other agencies from participating in the work." We believe that every student of the marketing problem will agree with this view. Marketing is not a thing apart from farming to be referred to a special governmental bureau. It is an essential feature of farming itself, and the one feature which is most closely related to the welfare and prosperity of city and town people as well as farmers. Its problems varying in details with every locality, can not be solved by a single agency. The Secretary intimates that he is planning to make every agency under his department contribute to the work. This means that agricultural colleges, state departments of agriculture and county bureaus will be directed to give greater attention to questions of marketing, and, possibly, a compact government organization employing all of these agencies, engaged in a general plan of eliminating wastes in marketing and installing system where none now exists. There has been a growing demand for participation in this matter by the various agricultural institutions now in existence. It appears that this demand is to be met.

STATE CAPITAL NEWS

The Bushel In Question.—Next to the stirring up of the question of appropriations for public works and the administration of the Highway department by the State Board of Agriculture's open discussions, nothing attracted more attention at the Capitol last week than the criticism of the so-called "commodities act," passed by the last legislature. Members of the State Horticultural Association attacked the law in discussions and the State Board passed a resolution demanding that the law be amended in the next session. To these criticisms James Sweeney, chief of standards of weights and measures of the state, comes back with some remarks that are pertinent. He says, of course, that the law was passed for the purpose of protecting the consumer, the public, in other words. He also makes the remark that the Pennsylvania standard of weight for a bushel is the same as a number of other states notably Maryland. He says that a standard is necessary before anyone can be arrested for not giving just weight or measure and that if stroke measure should be the rule the buyer would suffer. The act in question fixes standards for some eight commodities in daily use and it is claimed that some of the standards are not fair. It may be that this law will be one of the numerous acts of 1913 which the legislature of 1915 may be called upon to change.

Demands For Amendments.—Leaving the commodities act out of the question because there may be two sides to it, there appears to be a general desire thruout the state to amend laws, especially those of 1913, altho some have really been in operation a very short time. The last three or four legislatures have been more concerned with amendatory work than anything else and in spite of the work of expensive commissions and the activities of various committees the amendments do not seem to have gained general commendation. When it is considered that the average cost of getting a law thru the legislature is nearly $100, a demand that bills be studied before being presented and that they be faithfully studied after presentation is not out of place. Some of the laws on which changes are demanded were debated for hours last session and printed time and again at a cost of hundreds of dollars and yet changes are insisted upon, loudly in some cases, when the statutes are not nine months old. The cost to the State Treasury is moreover, a mere minor consideration, when the annoyance to people about constant changes of law is considered.

Liability Law.—From all accounts the commission in charge of such matter has been faithfully studying liability laws and their effects in other States and will meet this spring to formulate a report which will be strongly urged by the governor in his message to the legislature. Judging from the remarks here last week the opposition to a law which will put the farmer and the storekeeper and the creamery owner on the same plane as the Pennsylvania railroad is as objectionable as it was a year ago. Some of our constitutional lawyers assert that the exemption of farmers or small manufacturers can not be undertaken altho if that cannot be accomplished it is rather difficult to see how domestic service was exempted.

The Road Drag.—If it should happen that the State Highway Department should not take steps to give supervisors and property owners practical instruction in the use of road drags, as suggested by Dr. Donald McCaskey at the meeting of the State Board of Agriculture, this branch of practical instruction may be undertaken as part of the educational work of the Department of Agriculture. The officials of this department are naturally not much inclined to take up work which is the special province of the Highway department, but it could be added to the "curriculum" of the farmers institutes, if one may call it such, in the winter illustrated lectures and men could be engaged, if funds held out, to give practical instruction on roads in the spring. And it might be added that such instruction would be just as much a part of the educational work for the farmers as the teaching of drainage and water supply by the farm counsellors, altho such things are the main business of a state commission with broad regulatory powers. If the Highway department can not find the funds for practical instruction with the many road drags which are owned by the State and scattered thru the State they might be lent to the Agricultural department and men employed out of the contingent fund to instruct folks on country lanes, not embraced in the main highway system. The hiring of men from contingent funds is by no means a lost art on Capitol Hill and perhaps the auditor general would be lenient if some contingent funds should be consumed for so laudable a purpose as instruction in maintaining a road until the elder statesmen work out a plan for permanent improvement. The State department of agriculture has been demonstrating marked progressiveness lately and here is another chance.

School Code Next.—State School directors will hold the fort in this city the latter part of this week and it will be interesting to watch the way the school is handled. Thanks to an administration policy of discouraging amendments to the school code last session that monumental piece of legislation was untouched and a general disposition to allow it to work out was manifested, altho unhappily this seems to be passing away now. The school directors were the opponents of much of the legislation three years ago and some wanted to change things last session. No crying abuses have been heard of and it is to be hoped that instead of radical changes the directors will give attention to the opportunity of equalizing the educational advantages so that rural districts may give more to the people who live in the country.

Sidings And Stations.—Just how far duty to the public requires the placing of stations and sidings or how far their maintenance extends to railroad companies, is to be determined by the Public Service commission this winter. Complaints involving closing of stations or location and the right to siding facilities are before that body and it will shortly lay down the law. These are two propositions which concern the dwellers in the country more than anything else except rates and it is to be hoped that a general order will soon be issued establishing regulations which everyone can understand at a glance and which railroads must follow.

Compulsory Law Enforced.—It is rather gratifying to find that among the 2500 school districts of Pennsylvania but one has been found which does not enforce the compulsory education law. Indeed, judging from the remarks of State officials, the education law of the commonwealth has ceased to be regarded as compulsory, but education as something which the child has an inherent right to demand. Unfortunately the archaic system of making appropriations in Pennsylvania is as inadequate for education as it is for highway development, but perhaps better times are coming.—Hamilton, Harrisburg, Pa., February 2 .

NEW JERSEY FARM NEWS

Corn Contests.—There will be corn contests again this year for the boys in nearly every county in the State. Several new ideas have been developed. Aiming to make the boys in the corn growing contests true missionaries of better farming, the Burlington county agricultural contest committee announces plans for organizing many local corn clubs thruout the county, using former contestants as group leaders to encourage and direct recruits. The committee will conduct potato and poultry raising contests in addition to the corn-growing, which continues the big feature, and other branches may be added. The work will be under the direction of the Burlington county Y. M. C. A., the county board of agriculture, county board of education, and the granges. With these will be affiliated the Burlington county mothers' clubs, the latter directing the contests for girls in sewing, cooking and other domestic branches. County superintendent Jason S. Hoffman has announced another corn growing contest to be conducted in Hunterdon county during the present year. The plan for this year will be similar to that conducted during the past year when about 70 contestants were entered. It is expected that more than twice as many will take part in the contest this year. A local bank has donated $100 which will be distributed in different prizes. Corn growing contests having proved so successful in neighboring counties, the school principals of Warren county have decided to start similar contests this year. The various schools will be grouped into districts. Prizes will be awarded in each district for the best ears, best stalk, best yellow dent, best white dent, and the best essay on the subject. Then the prize winners in each of these districts will be entered in the county contest for the Grand Prizes. These awards will be made next November.

Farmers' Institutes.—Farmers' institutes have recently been held at Flemington, Stockton and Roseland, in each instance under the auspices of the local grange and in the grange hall. The addresses were by noted experts and covered about every conceivable phase of agriculture. The institute season in the State is now about over. The season's work has been very successful and the farmers have learned much that will conduce to larger profits and more comfortable living.

New Taxation Bills.—So far, fifteen bills designed to bring about a general revision of the tax laws of the State have been introduced in the Legislature. According to these bills, the property in the State for the purposes of taxation is divided into five classes: Railroad and canal property; property of public utilities; property used in the business of a bank, insurance, safe deposit or trust company; all other personal property and all other real property. It is provided that hereafter all personal property, structures or other improvements erected, earth elevations, grading, draining, or other

changes in the natural formation of land, all shall be exempt from taxation. This act shall not become operative until adopted by the voters of the municipality or taxing district. Another bill provides for the abolition of the State board of assessors and vests all the taxing power in the board of equalization of taxes.

State Treasury Deficit.—Since the passage of the so-called "Seven Sisters" the laws which drove thousands of corporations from this state, thereby greatly reducing the income from such sources, the receipts of the State treasury have been falling off. The decrease is also largely accounted for from the fact that the allotment of railroad taxes to counties for school purposes has hitherto been included in the balance. Because this matter was held up in the courts, there were two such payments made in a single year, which accounts in part for the large increase in disbursements. In order to meet the requirements of the budget it will be necessary to levy a State tax unless the greatest economy is practiced. Governor Fielder, however, has plans for reducing the running expenses of the State, as well as for consolidating several departments and commissions which will save a large sum of money.

Automobile Legislation.—Because of the heavy automobile traffic within the confines of this State, and because of the fact that the widest reciprocity is extended to automobilists from all other States, there is demanded every year a constantly increasing sum to keep the roads in repair. To obtain this increased revenue, Commissioner Lippincott, of the State Motor Vehicle Department, recommends that the present schedule of fees, which are lower than those exacted in most of the States, be repealed and that a charge of sixty cents a horse-power be substituted. The change will not materially increase the burden of the automobilists. An alternative recommendation is made that automobiles be exempted from taxation as personal property, and the rate per horse-power be fixed at one dollar. This latter plan will insure the State a revenue of at least $1,500,000 from automobile registrations, instead of $750,000 estimated. One-third of this amount he would divert to the State fund for general uses, tho it is undoubtedly a fact that the whole of it can be used to advantage in repairing our roads. As before mentioned, a State tax may be necessary, Comptroller Edward's report showing a deficiency of about $500,000 for the present year. The adoption of the Lippincott recommendation will about balance the books.

War On Farmer-Agent.—A great many farmers in this state are amused at the action of the Pennsylvania and New Jersey Retail Implement and Vehicle Dealers Association, whose recent convention at Philadelphia went on record as being in favor of extracting a pledge from wholesale houses to refuse to sell direct to farmers unless they are legitimate agents. The delegates who led the fight to prevent the farmer from becoming an implement agent take the stand that if the practice is continued scores of legitimate salesmen will have to resign their positions. My own experience is that farm machinery, etc., is better sold thru the farmer-agent than any one else. It is the same way with fertilizers. The farmers who hold agencies are, as a rule, prominent men in their respective communities. Being large purchasers, they know which is best and others buy on their recommendations. Besides, they extend a line of credit, which farmers could not enjoy if they purchased from unknown or non-sympathetic salesmen.

Other School Items Of Interest.—State School Commissioner Kendall claims that absenteeism among the pupils of the public schools caused a waste last year of $1,000,000. The cause of this is the fact that for every day a child attends a public school, the State pays ten cents to the district in which that child resides. As men who believe that five months in the year is enough for any child to go to school compose a majority of the boards of education in the country, refuse to enforce the compulsory attendance laws and will not employ an attendance officer, what is to be done about it, if the State does take a hand in the game!

Fish And Game.—The report of the State fish and game commission contains the following data: Fish distributed in State's waters during the past year total 4,000,000; efforts to raise birds at game farm at Forked River proved successful; increase in brook trout crowds the hatchery at Hackettstown; licenses for 1913 amount to $83,062; hunters killed 109 buck deer.—D. T. Hendrickson.

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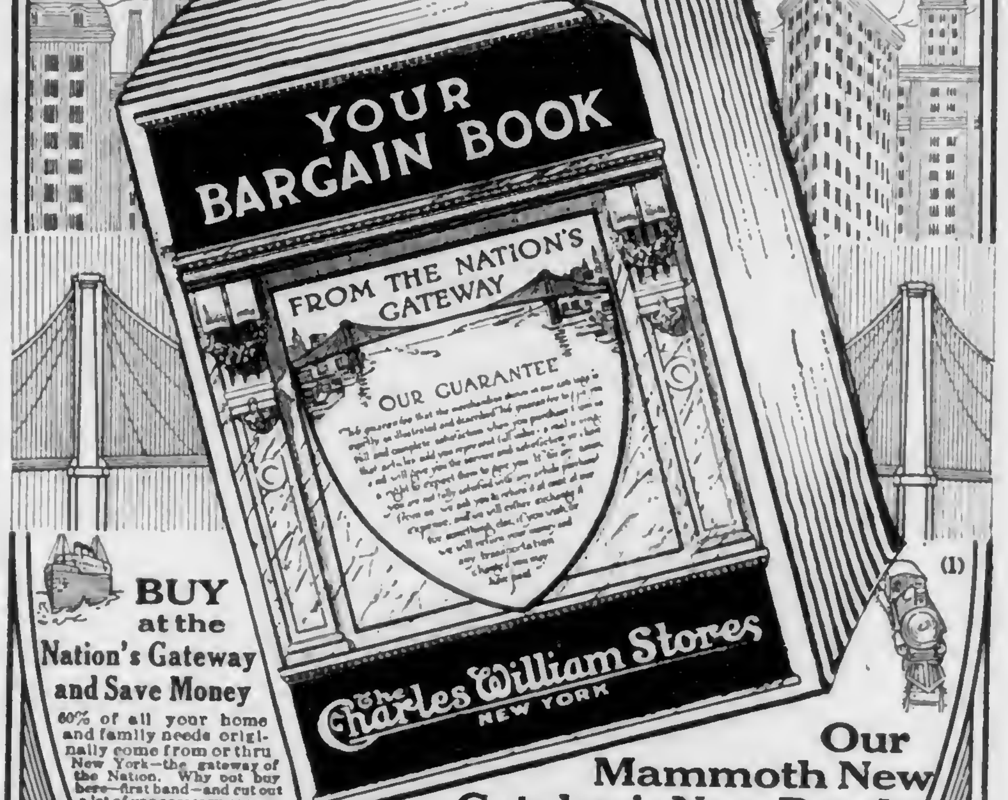

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Live Stock

AMERICAN BERKSHIRE CONGRESS AND LIVE STOCK BREEDERS ASSOCIATION MEETING

The eighth annual American Berkshire Congress meeting and sale of purebred swine was held at York, Pa., January 20 to 22. The meeting was held in conjunction with the Pennsylvania Breeders' Association. This meeting and sale was the most successful ever held from the point of view of attendance and interest. It was the first Berkshire Congress meeting held in the East and the results will do much to stimulate greater interest in Berkshire breeding and the swine industry thruout the East. The program offered was excellent and was furnished by some of the best Berkshire men in the country.

The session opened with a joint meeting to hear the reports of the officers and for the appointment of committees. The first discussion was on "Experiences in the Show Ring" by E. J. Barker, of Thorntown Indiana. Mr. Barker said that his show ring experience had been a very useful means of advertising his herd. He believed that there were not enough exhibitors of Berkshires and, hence, the breed was not so popular in some sections of the country. He advocated publishing the judges' names in the premium list. His advise to beginners was to be satisfied with the judging and to find out why certain placings were made, so as to profit by experience gained. He discussed briefly the fitting of hogs for the show ring, stating that the feeds used by him were milk, wheat middlings and corn, supplemented by tankage if the milk could not be obtained. His practice was to feed all they would clean up, twice daily, and be ready for the next feed. In fitting animals, get them started early to have them in good condition at time the show circuit opens. Handle carefully during the fall to keep them in the highest condition and bloom. He advocated very light feeding and no feeding at all while the hogs are shipped as they can be taken to the fair grounds in better condition than where they are fed on the road. He had never known of a boar being injured by over-fitting. Every show animal should be a regular breeder if properly handled on their return from the show circuit.

A GOOD TRIO OF BERKSHIRES FATTENING ON H. O. HOLCOMB FARM, CRAWFORD CO., PA.

Herd Boar and Sow.—Wyman Lovejoy, of Illinois, discussed "The Selection, Feed and Care of the Herd Boar and Brood Sow." It was principally along the line of selection of proper foundation stock, getting well-bred animals, and the best individuals that means will afford. He desires animals with a good wide forehead, strong back, long, smooth and deep sides, with well-developed hams. When breeding stock of such conformation is selected the breeder can make no mistake in starting a desirable herd.

Responsibility of the Seller.—Dr. Valley Hawkins, of Pennsylvania, gave an interesting address on "The Responsibility of the Seller." He considered this the most important part of the swine business in order to make it a permanent business and to make it popular. The seller should always be ready to satisfy a dis-satisfied customer. While it may seem that the buyer is unreasonable and unjust in his demands, yet for a breeder who expects to stay in business it will be advisable to do everything possible to satisfy the customer. A purebred swine breeder, to be successful, must be a good producer and build up a herd from foundation stock of good type and a good line of breeding. Such a herd should contain foundation stock that possess good strong bone, good conformation and a large digestive capacity. It is important to properly develop all young breeding stock that is to be sold.

It is better not to over-describe an animal in corresponding with prospective buyers. In answering inquiries the proper age and exact weight and pedigree of the animal should be given so that prospective buyers may make their selection. Prompt reply to all sales and neatness in shipment will make future sales and give the buyers a better impression of the breeders. All crates should be properly tagged, hogs well cleaned and in good condition when shipped, so as to put them in the hands of the purchaser in the best possible condition. It is often well to ask the buyer to give a statement of the condition and satisfaction of the hog upon arrival. Prompt registration and forwarding of certificates are points that make a responsible breeder.

Popularity of the Breed.—The first evening session was opened with a discussion of "Why Berkshires for the Farmer, Feeder and Packer" by Dean C. F. Curtis, of Ames, Iowa. He briefly reviewed the development of the pork industry in Iowa and indicated by figures why beef and pork are a combination that must go together. He stated that where live stock was kept on Iowa farms an increased yield of 14 bushels of corn per acre was secured. He feels that there is a bright outlook in swine industry since there is no tariff legislation or other uncertain business matters that have a tendency to discourage the production of pork. The greatest difficulty encountered is the question of disease. He called attention to breed tests in which the Berkshires had always held a prominent place, both in the economy of production and daily gains made, stating that Berkshires very often sold at the top of the market indicating that the packer was favorable to the Berkshire hog. He discussed the matter of pasture for hogs, stating that an average leguminous crop had given entire satisfaction and made it possible to produce hogs much cheaper besides reducing the danger of disease.

This discussion was followed by a demonstration with live barrows by W. H. Tomhave, of Pennsylvania State College. Two fat barrows were secured for this purpose, one being a desirable type of the right conformation and properly finished and the other a barrow of inferior type and not well finished for market. The desirable and undesirable points of each animal were discussed after which the hogs were taken in charge by a York packer where they were slaughtered and carcasses prepared for the meat demonstration the following evening.

Hog Cholera.—The meeting on the second day was opened with a discussion by J. L. Thatcher, of Iowa, on the subject of "The Breeders' Experience with Simultaneous Treatment for Hog Cholera." He stated that Iowa had more hogs in 1913 than all Atlantic sea board states and that the loss from hog cholera amounted to $16,000,000 in 1912. These conditions made it necessary to take some decided steps concerning the control of hog cholera and his experience at the Iowa farms was that the simultaneous treatment had reduced the amount of this disease to a minimum. He stated, however, that the use of simultaneous treatment was to be guarded by local conditions; that under many conditions he would not deem it advisable to use the simultaneous treatment. His experience proved to him that it was extremely important that both the serum and virus be fresh and potent. He felt that in practically every case, where undesirable results were obtained, it was due to poor serum.

The national and state governments should supervise every commercial manufacturing plant and all manufactured serum should be inspected before being sent from the factories. The breeder must know when and what hogs to treat in order to obtain satisfaction. The feeding hogs on his farm were taken off dry and heavy feed for several weeks during the vaccinating period. This subject led to a very interesting discussion concerning the control of hog cholera. It seemed to be the opinion of a great many that somethings could be done to stamp out cholera and that it could only be done by cooperation. Breeders took the stand that hog cholera could be controlled if the premises were properly cleaned and disinfected with strong solutions of lysol and lime and the means of dogs and birds carrying this infectious material be guarded against.

Mr. Thatcher was followed by Dr. R. M. Staley, of Pennsylvania, who discussed hog cholera in Pennsylvania. He presented a brief report concerning the amount of hog cholera in the state at the present time. He stated that formerly there was a loss of 90 percent from hog cholera where it had now been reduced to 22 percent by proper precaution in keeping outbreaks from spreading. He feels that many outbreaks of hog cholera are caused by the use of slops and garbage from cities. He states that where this was to be used it should be properly cooked so as to destroy all germs, and all other material should be properly burned and limed; this being done the control of hog cholera in this state would not be difficult. Pennsylvania is using only the simple serum method, feeling that in this way the cholera can be controlled if proper preventative measures are used.

Breeding as a Business.—W. E. Corsa, Illinois, stated that it is necessary to adopt good business principles in handling all purebred live stock. These results can only be obtained when one breed of each class of live stock is kept. Every beginner should make a careful study of the feeding and breeding of the class of animals that he selects. Animals of scrub breeding or with a scrub pedigree, should be avoided. It is very often a serious mistake to lay too much emphasis on fancy points and forget the utility value of the breeding animals. He stated that waiting, watching and working usually brings reward to the breeder. Constructive breeders are generally good feeders and he pointed out the advantage of constant employment on the live stock farm. Purebred sires clubs might be found to promote the purebred industry. His success in the purebred business has taught him that there are great opportunities, but there is no easy money to be made, altho it does bring a pleasure in associating with men that have high ideals and good business principles; it has not made millionaires. A herd of purebred live stock requires more efficient labor and consequently, costs more to develop than scrub or inferior stock.

Experiences.—N. H. Gentry, of Missouri, who is by many considered the father of the present Berkshire business, discussed the subject of "Experiences as a Breeder." He reviewed the development of his famous herd of Berkshires, together with his experience as a showman. In 1876 he purchased three animals that cost him $1,800, which was at that time considered one of the most sensational purchases ever made in the hog business. He felt that this purchase did as much as any one thing in securing buyers for his product. He felt that the beginner should purchase the best foundation stock that his means would permit, and that the opportunities in live stock business were as good today as when he began his work in the early seventies. His advice to breeders or advocates of purebred live stock is to get enthusiastic over the development of a high-class herd, as enthusiasm is the motor power in the chosen line of endeavor.

Business Integrity.—A. H. Tyron, of Ohio, discussed the subject of "Integrity of the Breeder." He took the stand that integrity should be the foundation of all live stock business; to give the buying public the full value of the purchase price and to make honest dealings the prime essential in developing of purebred live stock. The true value of all animals should be based on individual excellence, besides additional value in pedigree. The breeder should tell all buyers the poor points as well as the good points of the individuals that are for sale. A misrepresented animal usually means a dissatisfied customer, which no purebred breeder can afford to have on his list.

Berkshires on Every Farm.—L. E. Frost, of Illinois, spoke on "Why Berkshires on Every Farm." He stated that Berkshires were found in many sections of the east, south and west, altho not in as large numbers as they should be. He praised the excellence of Berkshire meat as compared to other classes of swine and urged that a special feature be made in promoting the breed. He suggested that in order to encourage the distribution of Berkshires and to make them popular, it would be necessary to have them exhibited in greater numbers at the various county fairs thruout the United States. He urged that an educational campaign be conducted to promote Berkshires in every section of the country.

Scientific Breeding.—An illustrated lecture was given by Prof. H. Hayward, of Delaware College, on "Scientific Breeding." He discussed the work that has been done in the past by live stock breeders and illustrated how it has been effective in building up the various breeds of live stock, together with the important part the various systems of breeding have taken in developing the various breeds.

The meat cutting demonstration, using the same barrows as were used in the live demonstration, was conducted by Prof. W. H. Tomhave. Both barrows were cut up in a commercial way, at the same time bringing out the desirable and undesirable points that were discussed in the animals on foot. The next session was devoted to a judging demonstration.

Berkshire Sale.—The purebred Berkshire sale was held on Wednesday afternoon. This sale was well represented by farmers and breeders from many sections of the United States. The hogs entered were excellent representatives of the Berkshire breed, which was indicated by the high average of $168 on the 49 head sold. Rockwood Barronness 17th, a yearling sow consigned by Rockwood Farms, Ames, Iowa, topped the sale at $650 going to Dellchester Farms, Newtown Square, Pennsylvania. One of the noticeable features of this sale was that every hog sold remained in the eastern part of the United States. None of the hogs went west of Pennsylvania.

Election of Officers.—At the annual business meeting the following officers of the American Berkshire Congress were elected for coming year: President, A. H. Tyron, Willoughby, Ohio; vice president, Henry Fielden, Newtown Square, Pa.; secretary and treasurer, F. S. Springer, Springfield, Ill. The place of holding the next meeting will be decided by the directors at some future session.

At the business meeting of the Pennsylvania Live Stock Breeder's Association it was decided to amalgamate the two societies, The Live Stock Breeders' Association and Pennsylvania Plant Breeders' Association, and that it be known as the Pennsylvania Breeders' Association. The following officers were elected for the ensuing year: President, E. S. Bayard, Pittsburgh, Pa; first vice president, M. D. Shoemaker, Greensburg, Pa.; second vice president, Carl W. Gay, Philadelphia, Pa.; secretary, George W. Stevenson, Waverly, Pa.; treasurer, J. F. Lance, Philadelphia, Pa. A Pennsylvania Berkshire Breeders' Association was also formed with officers as follows: President, H. Fielding, Newtown Square, Pa.; vice president, G. T. VanNorman, Philadelphia, Pa.; secretary-treasurer, J. E. Buckley, Philadelphia, Pa.—T.

EXERCISE FOR THE BROOD SOW

The sows that are to farrow in the spring should be taking exercise these days. Pigs will come stronger and will do better. The sow that has had plenty of exercise is not likely to eat her pigs, if never having done so. We recently found one of our bred sows half a mile from the sleeping quarters roaming a stubble field that had lately been cleared of fodder. We get rid of the short-legged, sluggish, fat sows. This sow is the leggy, muscular type that keeps on the move. Her two litters of nine pigs each, raised and sold without runts, are the best indorsement of her methods of exercise.—Geo. P. Williams, Delaware Co., O.

Cattle Lice.—There is not as much trouble with cattle lice as there used to be, because the animals are much better cared for. However, it is well to keep an eye out for any advances in this direction and take any necessary precautions. Curry the animals daily; and as a precaution, dust some one of the commercial powders on their backs occasionally and work it down into the hair. The animals will be thoroly appreciative of this treatment.—F. H. Dow.

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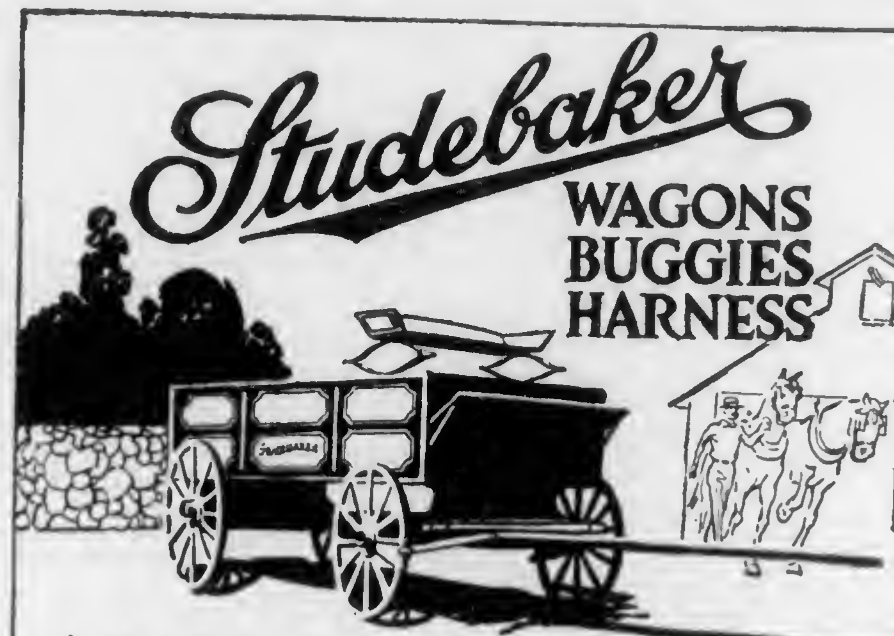
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FELS-NAPTHA

Household

THE INVALID'S TRAY.

By Mrs. H. M. Woodward

I have for many years had a few things that are used only during sickness. Among them is a small china tray in the form of a leaf, having circles with raised rims wherein are set the cup, sugar bowl and creamer. When the invalid requires only a cup of hot drink and a slice of toast this is a great convenience, the raised edges keeping the dishes from sliding about, but it is entirely too small to serve a meal upon. At a Sanatarium where I spent four weeks not long ago I saw individual dishes for the use of invalids that showed me how easy it is for one to make the dainty tray and make even a patient with no appetite try to eat. Individual sets of dishes of various kinds and colors can be obtained or separate pieces to suit one's fancy, tea or coffee pots, holding one cupful match the most of the sets, all having broad bases, as do also the sugar bowls and creamers, so they are not easily upset.

PREPARING WAFFLED POTATOES.

There is such a variety in the dishes, not only in color but in form, and often six or seven meals would be served in succession without the same set being used more than once. A tiny platter is used for meat, fish or omelet; individual casseroles and ramekins for vegetables or other food that is to be kept hot. Even when the food is not cooked in them, they are heated before it is put in, and it keeps hot longer than in any other way. Side dishes are small, holding only enough to tempt the appetite and never enough to tire one of the food.

The china toast rack holds two small slices. With the set of Japanese blue and white ware were small round covered dishes to hold food to be kept hot, the covers made with a rim on top exactly like that on the bottom of the dish, and when removed the cover stands in such a position that the sweat from the hot food cannot drip onto the tray cloth. It can also be used as a dish when a shallow one is needed. Some of the sets have no saucers, but instead have a circle with raised rim at one side of the plate, which is very convenient when only a light meal is served.

All dishes used at one time should correspond at least in color, as the invalid is often much disturbed by clashes of color. An especially beautiful set of these dishes was a pale sea green color all over without figures or other decoration. It seems to me that in a hot day they would give a sense of coolness and freshness that nothing else could.

For serving a dainty dessert the clear and thin stemmed glasses are most attractive, and if one is careful to select a style with broad base there is little danger of its being tipped over.

When serving hot rolls or toasted crackers they look most dainty rolled in a doily and placed in a covered dish.

The individual salt and pepper sets can be had in two styles; there is a tiny silver stand with clear glass bottles, but the kind I preferred had separate bottles of china without the frame, very small and tapering from a base an inch wide to the perforated top of not more than a third that size. All I have seen were of creamy white ware dusted near the top with gold.

The trays should be of papier mache or bamboo, preferably one of each, of large size, so that dishes will not be crowded. The former are pure white with enamel finish, do not become marred and are washed as easily as a dish. The square ones are best if a whole meal is to be served.

Tiny trays on which the medicine can be served are also useful, some of them being very beautiful. All trays for invalids' use should be deeper than for other purposes, so there will be less danger of dishes being pushed over the edges.

There should be a variety of tray cloths also, not necessarily with any great amount of hand work on them, but variety in form and coloring. An assortment of the dainty paper doilies will be found useful and attractive without adding to the laundry work. They come in several sizes, 5 to 9 inches in diameter, one kind costing 10 cents per 75, with 15 of each size. More beautiful ones of paper with linen finish and more elaborate lace border cost 10 cents for 24 assorted ones. A small one under the water glass or under any glass dish makes the tray very attractive, and they can also be used on the plate on which sandwiches, crackers or cake are served.

A fresh napkin, preferably paper, should be furnished at every meal. So many beautiful ones can now be obtained in crepe paper that an assortment can be had that will make more variety and less work than when linen ones are used.

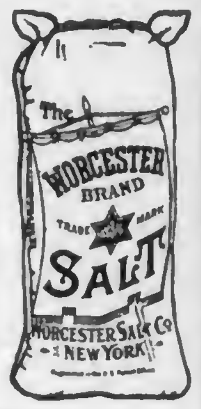
A table that is very convenient, and almost necessary if sickness is prolonged, is called a bedside table. It is made in such a way that the top extends over the patient's lap when he, or she, is proped up in bed being adjusted to any height or angle. The base extends under the bed so the balance is maintained and it can not tip. There are two sizes of these table tops, 18x24 and 18x27 inches, being made of oak or bird's eye maple veneer, and costing $3.25 to $4.75. In many cases families own one jointly, taking it from one home to another as needed. I have also seen a home-made table that answers the purpose. It is made like a footstool, except that the top is large like the bedside table top. The legs at the corners are long enough so that the table will not rest on the lap of the patient but will be low enough to be handy for use.

A sprig of parsley served with any meat, vegetable or soup looks very attractive. Any food that can be served on a lettuce leaf and a candied cherry, slice of orange or of lemon makes a wonderful difference in the appearance of any dessert.

In preparing jellied meats or fruits, blanc mange or gelatin it is well to use individual molds so that when the food is turned out it is in attractive form. One can find a great variety of aluminum molds in the ten-cent stores.

If whipped cream is liked a great many nice desserts can be prepared which are not only attractive to the eye but nourishing as well. When cool drinks are served they can be made more agreeable, tho possibly no cooler, by the addition of enough bits of ice to tinkle against the glass. Malted milk is often ordered and many patients dislike it, but it can usually be made palatable in one of two ways. Some people prefer it hot with salt, pepper and a little butter which makes it seem like soup; others like it cold with a little chocolate syrup and whipped cream, and take it thru a straw. In sickness one should always have some straws as it is often better to have the patient take a cold drink very slowly.

No medicine should be in evidence except at the moment when it is given to the patient. Small fancy wine glasses and beakers are nice to use when giving it, some beautiful ones being on the market at a low price. —Winnebago Co., Ill.



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Winston of the Prairie

By HAROLD BINDLOSS

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SYNOPSIS OF PREVIOUS CHAPTERS.

Farmer Winston, having failed as a homesteader, desperate, accepts a proposal to simulate Lance Courthorne, an adventurer. Courthorne and his pals are thus able to carry thru some smuggling operations. In the clash with the police, Courthorne kills Trooper Shannon, leaving evidence pointing to Winston as the murderer. The scene shifts to Silverdale, founded by Colonel Barrington. The Colonel is worried over wheat operations and the coming advent of Lance Courthorne, cousin to Maud Barrington, niece and ward of Colonel Barrington, to claim his share of his father's estate. Maud Barrington is told of Courthorne's past misdeeds. Winston, meanwhile, has pushed on to Montana, being held and later released, for lack of evidence, by a government officer, who discloses the belief on the part of the police that Winston is the murderer of Trooper Shannon. A letter for Courthorne is opened by Winston. Complying with instructions therein, he meets and confers with a lawyer respecting Courthorne's inherited acres at Silverdale, and following out his role as simulator of Courthorne, goes to Silverdale and is there received as graciously as could be expected. Some of his actions fail to tally with Courthorne's reputation. He wins the good will of Dane, one of the Colonel's advisers. The real Courthorne, who was supposed to have been drowned during the smuggling adventure, now reappears in Montana, inadvertently learns of his inheritance, and pieces together conclusive evidence that Winston has gone to Silverdale. Courthorne and Ailly Blake, whose life he has blighted, agree to ignore each other's identity. Winston and Maud Barrington, caught by a blizzard while driving to Silverdale, find shelter in a deserted shed over night, where he acts the part of a considerate gentleman. Maud Barrington promises Winston to sow her land in wheat the following spring. Under criticism from the Colonel Winston begins planting operations. He is commended by Maud Barrington for successful efforts to break the gambling habits of Ferris, a young Englishman, a task undertaken at her request. Courthorne now appears and Winston contracts to advance him money, provided he absents himself immediately. During a fire which threatens the wheat fields Winston is injured. Suspicions point to Ferris as the incendiary. Questioned, he admits his guilt, and is dispatched from the settlement. Winston sells his wheat and that of his friends at big profits. They pledge him support. Colonel Barrington, disregarding advice, loses heavily. Maud Barrington meets Winston one night near a bridge he is building on the range, where they are seen by Courthorne, who seeks by threats to extort more money from Winston. The latter prevents Courthorne's death on the bridge. Courthorne, hailed by a trooper, who takes him for Winston, signs documents intended for Winston and forgets to hand them to him later. At the hotel he is compelled to make a quick departure because of familiarities with a waitress, whose protector later tries to his sorrow to exact satisfaction from Winston, taking him as the offender, not, however, before part of the encounter is seen by the Colonel. Maud Barrington still asserts to her aunt that Winston is irreproachable.

CHAPTER XXI

The Face At The Window

It was a hot morning when Sergeant Stimson and Corporal Payne rode towards the railroad across the prairie. The grassy levels rolled away before them, white and parched, into the blue distance, where willow grove and straggling bluff floated on the dazzling horizon, and the fibrous dust rose in little puffs beneath the horses' feet, until Stimson pulled his beast up in the shadow of the birches by the bridge, and looked back towards Silverdale. There, wooden homesteads girt about with barns and granaries rose from the whitened waste, and behind some of them stretched great belts of wheat. Then the Sergeant, understanding the faith of the men who had sown that splendid grain, nodded, for he was old and wise, and had seen many adverse seasons, and the slackness that comes, when hope has gone, to beaten men.

''They will reap this year—a handful of cents on every bushel,'' he said. ''A fine gentleman is Colonel Barrington, but some of them will be thankful there's a better head than the one he has, at Silverdale.''

''Yes, sir,'' said Corporal Payne, who wore the double chevrons for the first time, and surmised that his companion's observations were not without their purpose.

Stimson glanced at the bridge. ''Good work,'' he said. ''It will save them dollars on every load they haul in. A gambler built it! Do they teach men to use the ax in Montana saloons?''

The corporal smiled, and waited for what he felt would come. He was no longer the hot-blooded lad who had come out from the old country, for he had felt the bonds of discipline, and been taught restraint and silence on the lonely prairie.

''I have,'' he said tentatively, ''fancied there was something a little unusual about the thing.''

Stimson nodded, but his next observation was apparently quite unconnected with the topic. ''You were a raw colt when I got you Payne, and the bit galled you now and then, but you had good hands on the bridle, and somebody who knew his business had taught you to sit a horse in the old country. Still, you were not as handy with brush and fork at stable duty.''

The bronze seemed to deepen in the corporal's face, but it was turned steadily towards his officer. ''Sir,'' he said, ''has that anything to do with what you were speaking of?''

Stimson laughed softly. ''That depends, my lad. Now, I've taught you to ride straight, and to hold your tongue. I've asked you no questions, but I've eyes in my head, and it's not without a purpose you've been made corporal. You're the kind they give commissions to, now and then—and your folks in the old country never raised you for a police trooper.''

''Can you tell me how to win one?'' asked the corporal, and Stimson noticed the little gleam in his eyes.

''There's one road to advancement, and you know where to find the trooper's duty laid down plain,'' he said, with a dry smile. ''Now, you saw Lance Courthorne once or twice back in Alberta?''

''Yes, sir, but never close to.''

''And you knew farmer Winston?''

Payne appeared thoughtful. ''Of course I met him a few times on the prairie, always on horseback with his big hat on, but Winston is dead—that is, I heard him break thru the ice.''

The men's eyes met for a moment, and Stimson smiled curiously. ''There is,'' he said, ''still a warrant out for him. Now, you know where I am going, and while I am away, you will watch Courthorne and his homestead. If anything curious happens there, you will let me know. The new man has instruction to find you any duty that will suit you.''

The corporal looked at his officer steadily, and again there was comprehension in his eyes. Then he nodded. ''Yes, sir. I have wondered whether, if Shannon could have spoken another word that night, it would have been Winston the warrant was issued for.''

Stimson raised a restraining hand. ''My lad,'' he said dryly, ''the police trooper who gets advancement is the one that carries out his orders and never questions them, until he can show they are wrong. Then he uses a good deal of discretion. Now you know your duty?''

''Yes, sir,'' said Payne, and Stimson, shaking his bridle, cantered off across the prairie.

Then, seeing no need to waste time, the corporal rode towards Courthorne's homestead, and found its owner stripping a binder. Pieces of the machine lay all around him, and from the fashion in which he handled them it was evident that he was capable of doing what the other men at Silverdale left to the mechanic at the settlement. Payne wondered, as he watched him, who had taught the gambler to use spanner and file.

''I will not trouble you if you re busy, Mr. Courthorne, but if you would give me the returns the Bureau ask for, it would save me riding round again,'' he said.

''I'm afraid I can't,'' said Winston. ''You see, I haven't had the papers.''

''Trooper Bacon told me he had given them to you.''

''I don't seen to remember it,'' said Winston.

Payne laughed. ''One forgets things when he is busy. Still, you had them—because you signed for them.''

Winston looked up suddenly, and in another moment smiled, but he was a trifle too late, for Payne had seen his astonishment, and that he was now on guard.

''Well,'' he said, ''I haven't got them now. Send me a duplicate. You have, no doubt, some extra forms at the outpost.''

Payne decided that the man had never had the documents, but was too clever to ask any questions or offer explanations that might involve him. It was evident he knew that somebody had impersonated him, and the fact sent a little thrill thru the corporal; he was at least on the trail.

Mitchell Big Six
$2,350.00

An uneven road plays hob with an automobile that isn't properly constructed and *which lacks engineering balance.* It strains the frame, the axles, the springs and the motor of a cheaply built car and no amount of repairs can *ever* make it good.

The Mitchell car is built to *give* where the give is necessary—to resist the strain and sudden jolt - to surmount these and other difficulties *without the disastrous wear and tear* which makes other cars burdens after a year's use—*or less.*

Farmers need better cars than people who live on smooth boulevards and there are hundreds of modern farmers who will tell you that the Mitchell has lasted them—in constant use—*five, six, seven and eight years* and are still the splendid utilities today that they were when bought.

The Mitchell car is more car and better car for the money than any other car in existence and we commend it to the farmer who wants an *economical utility* rather than an *expensive luxury.*

The Mitchell Models for 1914:

The Mitchell Little Six—fifty horse-power—132-inch wheel base—36x4½ inch tires—two or five-passenger capacity - - -	$1,895
The Mitchell Big Six—sixty horse-power 144-inch wheel base—37x5 inch tires—seven-passenger capacity - - - - -	$2,350
The Mitchell Four—forty horse-power four cylinders—120 inch wheel base—36x4½ inch tires—two or five-passenger capacity	$1,595

Equipment of all the Mitchell Models Included in the List Prices Here Given
Electric self-starter and generator—electric lights—electric horn—electric magnetic exploring lamp—speedometer—mohair top and dust cover—Jiffy quick-action side curtains—quick-action rain vision wind-shield—demountable rims with one extra—Tungsten valves—double extra tire carrier—Bair bow holders—license plate bracket—pump, jack and complete set of tools. Prices F. O. B. Racine.

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ALWAYS Mention PENNSYLVANIA FARMER —When Writing to Advertisers.—

''I'll bring you one round the next time I'm in the neighborhood,'' he said, and Winston sat still with the spanner lying idle in his hand when he rode away.

He realized that Courthorne had taken the papers, and his face grew anxious as well as grim. The harvest was almost ready now, and a little while would see it in. Then his work would be over, but he had of late felt a growing fear lest something, that would prevent its accomplishment, might happen in the meanwhile. Then almost fiercely he resumed the stripping of the machine.

An hour or two later Dane rode up, and sat still in his saddle looking down on Winston with a curious smile on his face.

''I was down at the settlement, and found a curious story going round,'' he said. ''Of course, it had its humorous aspect, but I don't know that the thing was quite discreet. You see, Barrington has once or twice had to put a stern check on the indulgence in playfulness of that kind by some of the younger men, and you are becoming an influence at Silverdale.''

''You naturally believed what you heard. It was in keeping with what you have seen of me?''

Dane's eyes twinkled. ''I didn't want to, and I must admit that it isn't. Still, a good many of you quiet men are addicted to occasionally astonishing your friends, and I can't help a fancy that you could do that kind of thing as well as most folks, if it pleased you. In fact, there was an artistic finish to the climax that suggested your usual thoroughness.''

''It did?'' said Winston grimly, remembering his recent visitor and one or two of Courthorne's Albertan escapades. ''Still, as I'm afraid I haven't the dramatic instinct, do you mind telling me how?''

Dane laughed. ''Well, it is probable there are other men who would have kissed the girl, but I don't know that it would have occurred to them to smash a decanter on the irate lover's head.''

Winston felt his fingers tingle for a grip on Courthorne's throat. ''And that's what I've been doing lately? You, of course, concluded that after conducting myself in an exemplary fashion an astonishing time it was a trifling lapse?''

''Well,'' said Dane dryly, ''as I admitted, it appeared somewhat out of your usual line, but when I heard that a man from the settlement had been ejected with violence from your homestead, what could one believe?''

''Colonel Barrington told you that!''

''No,'' said Dane, ''you know he didn't. Still, he had a hired man riding a horse he'd bought, and I believe—tho it is not my affair—Maud Barrington was there. Now, of course, one feels diffident about anything that may appear like preaching, but you see, a good many of us are following you, and I wouldn't like you to have many little lapses of that kind while I'm backing you. You and I have done with these frivolities some time ago, but there are lads here they might appeal to. I should be pleased if you could deny the story.''

Winston's face was grim. ''I'm afraid it would not suit me to do as much just now,'' he said. ''Still, between you and I, do you believe it likely that I would fly at that kind of game?''

Dane laughed softly. ''Well,'' he said, ''tastes differ, and the girl is pretty, while you know, after all, they're very much the same. We have, however, got to look at the thing sensibly, and you admit you can't deny it.''

''I told you it wouldn't suit me.''

''Then there is a difference?''

Winston nodded. ''You must make the best of that, but the others may believe exactly what they please. It will be a favor to me if you remember it.''

Dane smiled curiously. ''Then I think it is enough for me, and you will overlook my presumption, Courthorne. I wonder now and then when I shall altogether understand you!''

''The time will come,'' said Winston dryly, to hide what he felt, for his comrade's simple avowal had been wonderfully eloquent. Then Dane touched his horse with his heel and rode away.

It was two or three weeks later when Winston, being requested to do so, drove over to attend one of the assemblies at Silverdale Grange. It was dark when he reached the house, for the nights were drawing in, but because of the temperature few of the great oil lamps were lighted, and the windows were open wide. Somebody had just finished singing when he walked into the big general room, and he would have preferred another moment to make his entrance, but disdained to wait. He, however, felt a momentary warmth in his face when Miss Barrington, stately as when he had first seen her in her rustling silk and ancient laces, came forward to greet him with her usual graciousness. He knew that every eye was upon them, and guessed why she had done so much.

What she said was of no moment, but the fact that she had received him without sign of coldness was eloquent, and the man bent very respectfully over the little white hand. Then he stood straight and square for a moment and met her eyes.

''Madam,'' he said, ''I shall know whom to come to when I want a friend.''

Afterwards he drifted towards a group of married farmers and their wives, who except for that open warranty, might have been less cordial to him, and presently, tho he was never quite sure how it came about, found himself standing beside Maud Barrington. She smiled at him, and then glanced towards one of the open windows, outside which one or two of the older men were sitting.

''The room is very hot,'' said Winston tentatively.

''Yes,'' said the girl. ''I fancy it would be cooler in the hall.''

They passed out together into the shadowy hall, but a little gleam of light from the doorway behind them rested on Maud Barrington as she sat down. She looked inquiringly at the man as tho in wait for something.

''It is distinctively cooler here,'' he said.

Maud Barrington laughed impatiently. ''It is,'' she said.

''Well,'' said Winston, with a little smile, ''I will try again. Wheat has made another advance lately.''

The girl turned towards him with a little sparkle in her eyes. Winston saw it, and the faint shimmer of the pearls upon the whiteness of her neck, and then moved his head so that he looked out upon the dusky prairie.

''Pshaw!'' she said. ''You know why you were brought here tonight.''

Winston admired her courage, but did not turn around, for there were times when he feared his will might fail him. ''I fancy I know why your aunt was so gracious to me. Do you know that her confidence almost hurts me?''

''Then why don't you vindicate it and yourself? Dane would be your mouthpiece, and two or three words would be sufficient.''

Winston made no answer for a space. Somebody was singing in the room behind them, and thru the open window he could see the stars in the soft indigo above the great sweep of prairie. He noticed them vacantly and took a curious impersonal interest in the two dim figures standing close together outside the window. One was a young English lad, and the other a girl in a long white dress. What they were doing was no concern of his, but any trifle that diverted his attention a moment was welcome in that time of strain, for he had felt of late that exposure was close at hand, and was fiercely anxious to finish his work before it came. Maud Barrington's finances must be made secure before he left Silverdale and he must remain at any cost until the wheat was sold.

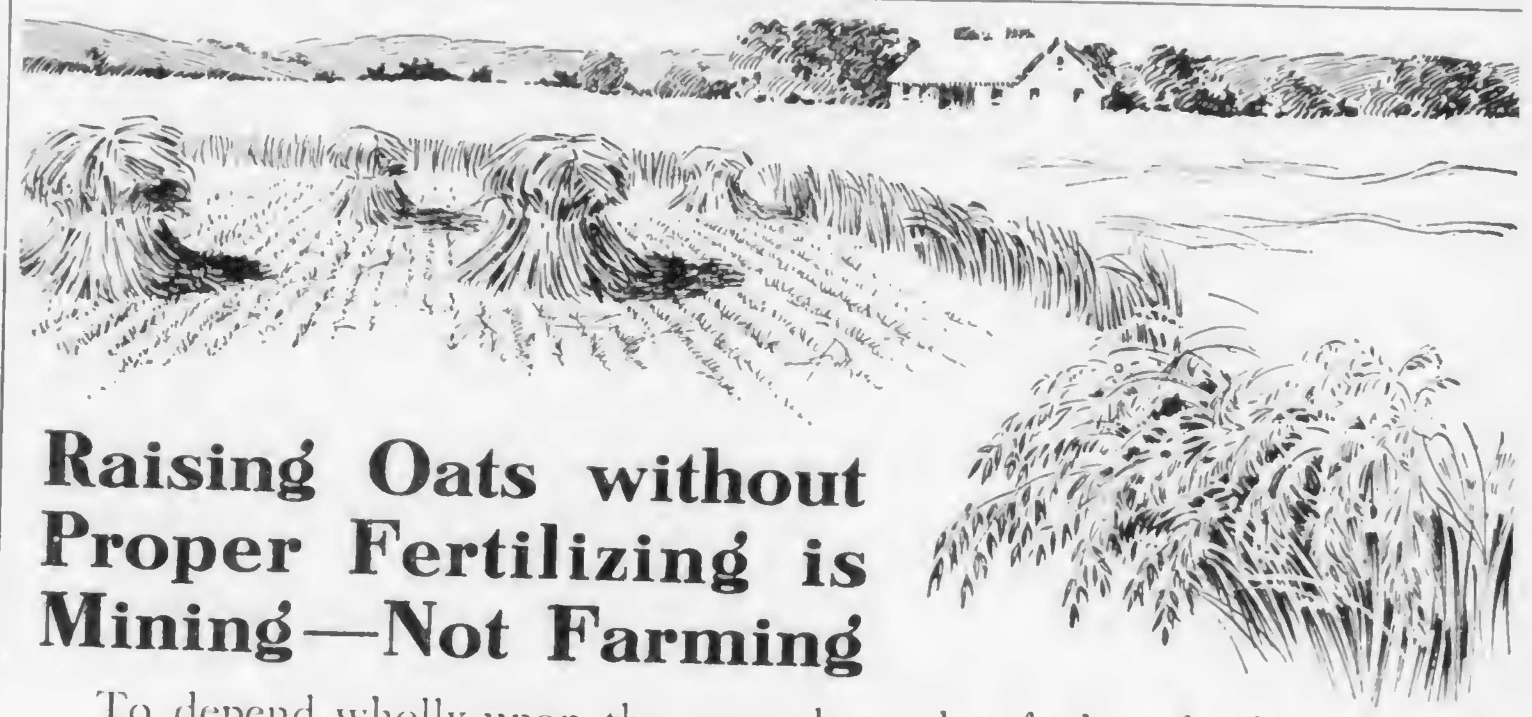
Then he turned slowly towards her. ''It is not your aunt's confidence that hurts me the most.''

The girl looked at him steadily, the color a trifle plainer in her face, which she would not turn from the light, and growing wonder in her eyes.

''Lance,'' she said, ''we both know it is not misplaced. Still, your impassiveness does not please us.''

Winston groaned inwardly and the swollen veins showed on his forehead. His companion hal leaned forward a little so that she could see him, and one white shoulder almost touched his own. The perfume of her hair was in his nostrils, and when he remembered how cold she had once been to him, a longing that was stronger than the humiliation that came with it grew almost overwhelming. Still, because of her very trust in him, there was a wrong he could not do, and it dawned on him that a means of placing himself beyond further temptation was opening to him. Maud Barrington, he knew, would have scant sympathy with an intrigue of the kind Courthorne's recent adventure pointed to.

(To be continued.)



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Potash Pays in heavier heads, better grade, a greater proportion of grain to straw, and freedom from lodging. Balance the phosphate and nitrogen with 6 to 8% of potash.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 2, 1914.

Strictly high grade butter was well cleaned up, but there was a surplus of unattractive grades. Fine fresh eggs sold fairly and values were well maintained under moderate offerings. There was little change in the poultry market, but values were well maintained under moderate offerings. Fruits and vegetables were generaly quiet.

Butter.—Western creamery, 29c; extras, 27c; firsts to seconds, 24@25½c; special prints, 33@36c; near-by prints, 30c.

Eggs.—Candled, 39@41c doz; extras, 37c. Current receipts at $10.20 per standard case. Near-by firsts, $10.50 standard case.

Poultry.—Fowls, 15½@16½c; young chickens 15½@16½c; old roosters, 11@12c; turkeys, 16@18c; ducks 16@18c; geese, 15@17c; pigeons, 20@28c pair.

Dressed Poultry.—Western fowls, 14@23c; roosters, 14c; turkeys, 21@24½c; roasting chickens, 18c; ducks, 17@19c; squabs, $2@4.85 doz.

Vegetables.—White potatoes, Pa., 75@90c bu. Onions, $2.50@2.60 per 100-lb bag. Lettuce $1.25@2.00 hamp. Sweet potatoes, 35@50c bas; Squash $1.50 box. Celery 60@85c bch. Cabbage, $1.75@2.00 bbl; Cauliflower $1.50@1.75 hamp. Mushrooms 60c@$1.00 per 4 lb bas.

Fruits.—Apples, $3.50@5.50 bbl. Cranberries, $2.50@3.50 crate. Lemons $2.00@3.00 box. Grapefruit, $2.00@4.50 box Oranges, $1.50@2.50 box. Pears, 60@80c bas. Pineapples, $2.00@3.25 crate. Grapes almeria, $4.00@6.00 keg.

Hay and Grain.—No. 3, large bales, $18.00 No. 1 medium bales, $17.00@18.00, No. 2 medium $16.00@16.50; no grade $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00. Straw, No. 1, straight rye, $17.00; No. 2 do., $16.00; No. 1 tangled rye straw $12.00; No. 2 do., $11.00@$11.50 No. 1 wheat straw, $9.50@10.00; No 1 oat yellow, kiln dried 72@73c: Natural No. 2 yellow, 69½@70½c. Wheat No. 2 red 96@ straw, $10.00@10.50. New shell corn No. 2, 96½c; No. 1 Northern $1.00½@1.01½ No. 2 white oats 45½@46c; No. 3 white, 44@44½c. Standard white 45@45½c.

Coffee.—Rio 7s 9½c; Santos 4s 12⅛c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.10 cwt.; cubes, $4.35; powdered, $4.20; graulated, $4.10; standard granulated, $4.15; crystal A, $4.10.

Flour.—For 196 lbs, in wood, winter-clear, $3.75@4.00; do. straight, $4.15@4.30; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 17c; do. country, 15c. Cows, 16c; do. country, 14½c. Bulls abattoir, 14½c; do country, 13c. Calf skins, Nos. 5 to 12 and up, $1.45@2.70; do. green, 14@15c.

Provisions.—City beef, in sets, smoked and air dried, 32@32½c. Beef hams, $40@42. Park, family, $23@24. Hams, cured, 13½@14¼c; skinned 14@14½c; smoked, 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10¼@10¾c; do smoked, 12½@13c. Bellies in pickle, 13¼@13¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 12@12¼c tcs; do in tubs, 12⅛@12⅜c; do kettle rendered, 12@12¼c. Tallow, prime city, 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 15c ¼-pk. Peppers, 2 for 5c. Eggplants 30@50c doz. Cabbage 10@15c head. Lettuce, 19c head. Beets new, 15c bunch. Sweet potatoes, 15c ¼ pk. White potatoes, 25c ½-pk. String beans, 15@18c qt. Tomatoes, hothouse, 65c carrier. Cucumbers, 10@15c apiece. Celery, Florida, 50@75c bunch. Pennsylvania, 25@30c. bch., Squash 5@10c. Coulifiower, 15@30c head. Mushrooms, 35@50c lb.

Fruits.—Pears, 75c per basket. Grapes 25@35c lb. Apples, 20c ¼-pk. Pineapples, 25@35c apiece. Cranberries, 15c qt; Lemons 20c doz; Grapefruit, 2 for 25c; Oranges, 25@50c doz.

NEW YORK PRODUCE

New York City, Feb. 2, 1914.

Eggs.—State and near-by hennery whites, fine to fancy, 39@40c; gathered whites, 39c; fair to good 37@38c; no grades, 35@36c; fresh gathered, firsts to extras 32½@35c; seconds to thirds, 27@31c; no grades 23@28c, mixed 32@34c.

Butter.—Creamery, firsts to extras, 25@27c; thirds to seconds, 21½@24½c, state dairy, 19@26c; packing stock 17@20c; process, 20@24c.

Cheese.—Whole milk specials, 18@18½c do. common to fancy, 11½@17¾c. skims 5@14½c.

Dressed Poultry.—Turkeys, dry, 18@25c; chickens, 16@25c; fowls, 12@18c; old roosters, 13c; ducks 10@16c.

Live Poultry.—Prices not settled.

Vegetables.—Cabbage, $18.00@26.00 ton. Green beans, $1.50@3.50 bas. Carrots $1@2.25 bag. Cucumbers, $2@4.50 box. Lettuce 75c@$2.00 basket. Squash, $2.25@3 bbl. Celery, $1.50@3.50 per sta . case. Onions $2.40@2.60 100-lb bag. Tomatoes, $1.00@3.50 carrier. Peppers $1.50@1.75 per carrier. Beets, $3@4 per 100 bunches. Potatoes, $2.50@5.25 bbl. Sweet potatoes, $1@1.50 bbl. Eggplants, $2.50@3.50 box. Cauliflower $1.25@2.00 bas.

Fruit.—Apples, $2@6.50 bbl. Cranberries $9@13 bbl. Pears, $2@3.75 bbl.

Grain.—Wheat No. 2, red 96@96½c; No. 1, Northern, $1.00½@1.01½c; corn, No. 2, yellow, new 69½@70½; oats, standard, white, 45@45½c.

BALTIMORE PRODUCE.

Baltimore, Md., Feb. 2, 1914.

In Baltimore wholesale market butter was firm. Eggs and poultry were steady.

Butter.—Creamery, fancy, 30@31c; do. choice 27@30c; prints 35@36c; blocks 31@34c; Maryland and Penna. rolls, 20@21c. Process, 25@26c.

Eggs.—Near-by firsts, 32c; western, 32c; southern, 30c.

Live Poultry.—Hens, 15c; chickens, 18@19c; old roosters, 10c; ducks, 17@18c.

Dressed Poultry.—Turkeys, 23@24c; chickens, 17@18c; old roosters, 10@11c; ducks, 17@18c.

Vegetables.—Potatoes, Maryland and Penna 70@75c bu; Beets, 6@8c bch. Beans, green $3.00 per basket; Celery, $2.00@2.50 crate. Cucumbers, $4.00@4.25 bas. Lettuce $1.50@2.25 bas. Tomatoes, $3@3.50 car. Onions $1.10@1.20 bu. Eggplant $3.50@4 crt, Spinach $1.25@1.50 bbl. Squash $1.50@2.00 crate; Cauliflower, $2@2.50 bas. Cabbage $26@28 ton.

Fruits.—Apples, $1.50@4.50 bbl. Cranberries, $12@15 bbl. Grapefruit $2.50@4.00 box

Mill Feed.—Spring bran $26.50@27. Middlings, flour to white, $27.00@29.00; western middlings, $26.50@27; city mills, mid., $26.50@27.00.

Grain.—Wheat, No. 2, red western, 97⅝c; Spot, 97⅜c; corn yellow shelled 71½@72c. Oats standard, white, 44@44¼c; No. 3 white 43½@43¾c. Rye, 60@68c.

Hay and Straw.—Timothy No. 1, $17.50 No. 2 timothy $16.00; do. No. 3, $14.00@15.00. No. 1 clover, $15.50 No. 2, do., $13@14.50; No. 1, tangled rye straw, $11.50@12.00; No. 1 oat straw, $9.00@9.50; No 1 wheat straw, $8.50.

YORK PRODUCE MARKET

York, Pa., Feb. 2, 1914.

The markets remained about normal the past week, steady prices prevailing in all departments. Butter and eggs maintain the high holiday level of prices later than usual this season.

Eggs.—33@35c.

Butter.—Country, 33@35c; separator, 36@38c. Milk 6c per quart. Cream, 12c per pint.

Poultry.—Hens 14@15c lb; springers 15c lb. Dressed poultry, 35@80c each.

Vegetables.—Potatoes, 7@15c ½-pk; 40@80c bu; cabbage, 2@12c each; lettuce, 3@6c; beets, 3@5c bch; radishes, 5c bch; onions 5c bch., 12@16c per ½-pk; lima beans, 12@14c qt; sweet potatoes, 12@15 per ½-pk.; lard 14@16c lb; celery, 5@12c; peppers, 8@12c doz; turnips, 6@10c per ½-pk. soup beans, 10@12c qt; sauer kraut, 5@8c qt; apple butter, 18@22c qt.

Fruit.—Apples, 10@30c ½-pk; pears, 10@25c per ½-pk; chestnuts, 10@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.04 bu; corn, 82c; oats, 55c; rye, 77c; bran, $1.40 cwt; middlings, $1.50 cwt.

Wholesale Grain Market. — Wheat, 94c; corn, 70c; oats, 47c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 2, 1914.

Beef Cattle.—Trade was of a draggy and indifferent character and while prices were holding about steady under moderate offerings general conditions were unsatisfactory. Ohio, Virginia and Pennsylvania brands were principally in evidence.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,566	7,905	5,687
Previous week	2,770	7,711	4,919

Best steers	$8.65@8.80
Choice steers	8.50@8.60
Good	8.30@8.40
Medium steers	7.87@8.10
Common steers	7.50@7.65
Bulls	5.25@6.70
Fat Cows	6.20@6.75
Medium cows	4.75@5.75
Thin cows	2.75@4.00
Milk cows	45.00@75.00

Veal calves steady.

Best calves	$11.50@12.00
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	6.50@7.00
Roughs	5.00@8.00

Sheep and Lambs.—The light run of stock held values ordinarily steady, but the close was dull and disappointing.

Extra wethers	6.00@6.25
Choice wethers	5.75@6.00
Good do.	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	5.00@5.50
Extra lambs	8.25@8.50
Good to choice do	8.00@8.25
Common to medium	5.50@8.00

Hogs.—Inquiry was moderate, with a regular straight price predominating. Westerns $12.00.

City Dressed Stock. — Every variety of choice and prime meats closed steady, trade being normal. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@10c; extra wethers, 10½c. Spring lambs, 13@14c. Extras, 16c. Hogs, 12¼c.

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 2, 1914.

Cattle receipts for the week, 1,148 head against 2,169 last week.

Steers	$6.00@8.25
Heifers	5.50@7.25
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh Cows	35.00@77.50

Sheep and lamb receipts for the week were 2,381 head against 2,116 last week. Fair supply; market slow.

Sheep	$3.00@6.00
Lambs	5.50@8.50

Calf receipts for the week were 426 head, Fair supply; market slow at $6.00@11.

Hog receipts for the week were 13,698 head against 14,411 last week.

Light Western	$9.25@9.35
Heavy to medium	9.10@9.15
Near-by	9.15@9.30
Pigs	9.00@9.15
Roughs	7.75@8.60

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 2, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter strong at 26½c.

NEW YORK HAY MARKET.

New York City, Jan. 31, 1914.

Hay prices remain generally steady on all grades. There is a fair demand for the better grades. Receipts today were 1,188 tons. Timothy, No. 1, $1.05 bale; standard 97½c cwt, No. 2, 90@95c; No. 3, 80@85c; clover 80@97½c.

Straw.—Straws remains generally quiet. Receipts nominal. Oats straw 50@75c bale; rye 80@85c.

VISIBLE GRAIN SUPPLY

New York, Feb. 2.—Visible supply of grain:

Wheat, decreased, 847,000 bushels.

Wheat, in bond, decreased, 1,104,000 bushels.

Corn increased, 813,000 bushels.

Oats decreased, 429,000 bushels.

Oats, in bond, increased, 42,000 bushels

Rye decreased, 124,000 bushels.

Barley decreased, 451,000 bushels.

Barley, in bond, increased, 45,000 bushels.

Make Every Inch of Soil Produce the Maximum at Lowest Cost

IN ORDER to make your soil produce its maximum yield, you should supply a fertilizer "made to order" to meet your individual soil and crop conditions.

Consumers Brands for General Farm Use

comprise special distinct compositions of plant food elements for forage crops, root crops and cereals to meet just your individual soil and crop requirements. They supply just the constituents your particular soil may need for some special crop. You pay for no unnecessary plant food elements.

Early Crop Odorless Fertilizer

is prepared especially for the market garden trade for vegetables, small fruits, greenhouse and garden crops. It supplies the four plant food elements needed for these crops in soluble form, mixed in such proportions as to meet your particular soil and crop requirements. Although soluble, it is so prepared in granular form as to prevent leaching and wasting. It produces quick growth and early maturity, which means *bigger profits.*

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For Florists and Gardeners for Greenhouse Work

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Bowker's Fertilizers

accomplish also the more difficult task of getting the right blending, the right solubility into a mixture which will run readily and freely from the farmer's planter, and which will remain dry and drillable as well as efficient until used in the field. We make a brand to fit every crop need.

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and keep the dealer's profit in your own pocket. We sell you at exactly the same price as your dealer would have to pay us. We protect you with

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that every sheet must be perfect, full weight and brand new or it doesn't cost you a cent.

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Greenwood, Ind., March 10, 1913
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Druggists everywhere sell Save-the-Horse WITH CONTRACT, or we send by Parcel Post or Express paid.

OR write and we will send our—BOOK—Sample Contract and Advice—ALL FREE to (Horse Owners and Managers—Only). Address

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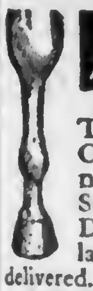

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Buy direct from our factory. Hundreds of exclusive styles. Wire and Ornamental Iron guaranteed Fences for every purpose; Gates, etc. Write for Free Catalog, First Order and Early Buyer's Offer! Ward Fence Mfg. Co., 155 Penn St., Decatur, Ind.

HORSE LAME? Use KINDIG'S Famous OINTMENT. A sure cure for bone, bog, and blood spavin, ringbone, curb, soft bunches, splint, etc. 50 cents, post paid. E. Kindig, Jr., Remedy Co., 4826 Wood and Ave., Phila.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. When reply by mail is requested, it becames private practice and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Callus on Pastern.— We have a mule that was cut with wire on front pastern. It left a hard gristle or callus which causes lameness whenever she exerts very hard. She met with this injury five years ago. W. L. S., New Bloomfield, Pa.—An old chronic ailment of this kind is difficult to cure; however, if you will apply equal parts tincture iodine and camphorated oil, it will stimulate a healthy action and give some relief. These applications should be made every day or two.

Knuckling.—I have a horse coming four years old that knuckles in hind pastern joint. Will you prescribe for him? When starting he appears to rock forward as tho from weakness. I also have a three-year-old colt that does the same thing. S. M., Glenmore, Pa.—Natural conformation has a whole lot to do with a horse remaining sound, or becoming unsound. This family of horses is perhaps inclined to stand perpendicular on their joints with insufficient angle; therefore if the ligaments of fetlock become sprained, they soon tilt forward and when first starting are inclined to rock. Mix together 1 part aqua ammonia, and 3 parts sweet oil and apply to fetlock joint every day or two.

Indigestion—Impaction.—Recently I purchased a fresh cow with a good husky calf; she had been poorly kept, was very thin, and in fact she was merely a frame. Before buying I milked her and found her milk very rich, so believing I could get her up in shape and on account of good cows being scarce in this neighborhood, I took her. Since owning her, I fail to get her to eat any ground feed at all. I have tried bran slop and corn ground on the ear, but she will not touch them. She will eat whole corn off the ear and stalks with quite a relish. Her bowels are very constipated and thinking this might be the trouble, I gave her one pint of raw linseed oil, but this had no effect. Can you recommend a liquid physic or tell me what you think might be her trouble? She is only four years old and I would like to build her up. A. M., Freehold, N. J.—If her bowels do not act properly, give her one pound of Epsom salts in three pints of warm water as a drench daily until her bowels loosen. One dose is usually sufficient and cathartics should never be given unless the bowels refuse to act properly and when the stomach and bowels are over-loaded. In order to create an appetite you had better give her ½ oz. ground gentian, 1 dram ground nux vomica, 1 dram powdered sulphate of iron and a dessert spoonful of Fowler's solution in one pint of water as a drench, 3 times a day. If she will not eat this in feed, you may use 1 dram fluid extract nux vomica, ½ oz. fluid extract cinchona, ½ oz. fluid extract gentian at a dose in a pint of waater as a drench.

Fistula of Withers.—I have a 10-year-old mare that has a bunch on withers. I opened this bunch and allowed pus to escape and this discharge has kept up ever since. She seems in good health in other respects and I am quite anxious to get this bunch healed up. I have been advised to give serum treatment, but I would like to have your opinion before allowing my veterinarian to apply the treatment. M. S. T. Washington, Pa.—I have considerable confidence in polyvalent bacterin treatment, for I have obtained fairly good results by its use. I would advise you to let your veterinary treat the case. You may also advise him to apply 1 part iodoform and 10 parts boracic acid. This medicine should be put in a gelatine capsule and forced to bottom of abscess and allowed to remain there.

COUNTY NOTES

Cumberland Co., N. J. (C.) Jan. 15.—Farmers in this section are taking advantage of the warm weather and are plowing their sod fields and many are carting wood supply home. Some seed potatoes are being carted from the stations which have been shipped from Maine. The corn crop was rather light altho crops in general have been quite successful. Many farmers are working on the roads with their teams, the work being rushed before the ground freezes. Corn selling for 70c per bu.; eggs, 38c doz; butter 30 to 40c lb; wheat, 90c; oats, 60c; dressed chickens 23c lb; turkeys, 30c lb; wheat making a good growth.—C. J. S.

Montgomery Co., N. Y., (E.C.) Jan. 17.—Severe cold wave, 30 degrees below on January 13. Good sleighing. Stock and poultry suffer from cold. A county breeder recently sold a Holstein bull for $6,000 and some cows at fancy prices. Very little farm work being done. Fine ice being harvested. Stone Arabia Grange Installation very largely attended. Town taxes being collected.—John L. England.

Fayette Co., Pa., (S.W.) Jan. 20.—Has been very cold for the past week but it is warmer and raining today. There has been very little snow this winter. Live stock is still very scarce. Prices are continuing very high. Fat hogs are about all sold. Very few fat steers in this section. Feeders are selling at 7c per lb. The mild open winter has given the farmers a splendid opportunity to do their winter work. Wheat is looking fine. Some plowing has been done.—Samuel A. Harris.

Montour Co., Pa., (C.) Jan. 21.—Coldest weather was 12 degrees below. Storms change from rain to snow. Farm prices unchanged. Hogs, dressed, 11c; beef 6½@7½c; veal 9c; cows, $50 to $60; horses, $150 to $200; Apples, $1; potatoes, 90c to $1; corn, 75c; wheat, 90c; oats, 50c; hay, $16; butter, 40c; eggs, 35c; milk, 7c. The generally fine weather has enabled all to have work well in hand. Ice hauling about finished.—Benjamin L. Diehl.

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The Sulky with the Steel Frame and Patent Auto Foot Frame Shift

The John Deere Two-Way Plow will work equally well on hillsides and level land. It is well balanced, easy to operate, light draft and efficient,—built in the East for Eastern conditions.

It is the only two-way plow that has the Patent Auto Foot Frame Shift, which insures accurate and uniform width of cut. It will do the highest grade work for the longest time with the least possible effort and expense.

These Are Some of the Reasons:

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4. Automatic Shifting Hitch: Positive and Automatic. Clevis cannot fail to move to position.
5. Automatic Horse Lift: Operator's foot releases latch. Pull of team raises bottom. Hand lever also provided.
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8. Chilled, Full Steel and Combination Bottoms: All styles made expressly for Eastern conditions.
9. Removable Shin Piece: Insures keen cutting edge—easily renewed—prolongs life of moldboard.

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The number available is limited. Make sure of yours.

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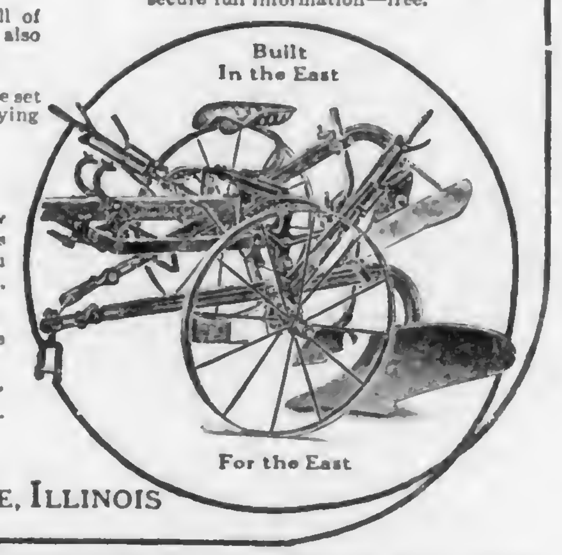

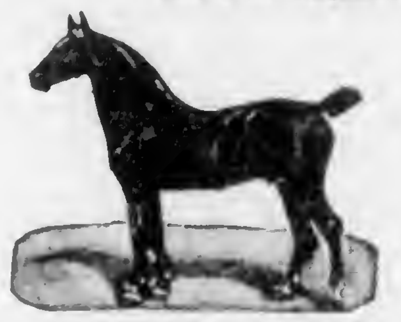

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You can order a complete carload of building material from us, including everything you need to construct and equip and we will ship it to you, without one cent cash in advance.

All we want to know is that the money will be paid us as soon as the material is received, unloaded and checked up.

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Yes, we mean smashed. Absolutely busted to pieces. That's our policy. We quote prices on lumber that will positively save you big money. If you will send your lumber bill we will send you a freight paid price that will mean a saving to you of from 30% to 50%. Every stick is absolutely first class, brand new and fully up-to-grade such as you would buy from any reputable house in the United States.

We have determined that the year of 1914 is going to be the Banner year in our great lumber department. We have on hand 20,000,000 feet of high-grade lumber suitable for the construction of Buildings, no matter for what purpose intended. Come to our great yards in Chicago and let us show you this stuff actually in stock. No other concern in the world has a more complete stock of everything needed to build, whether Lumber, Shingles, Structural Iron, Plumbing, Heating, Doors or anything else that you may need. Do you know that lumber is getting scarcer and scarcer every year? Yet our prices are lowest and will continue so until our stock is gone. WRITE TODAY.

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Galvanized Steel Roofing Is Fire, Water and Lightning Proof

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$1.25 per 100 sq. ft. buys best steel roofing

Write us today for our special FREIGHT PREPAID PRICES on new, galvanized roofing. We are offering prices lower than ever before offered in the roofing business. Galvanized roofing at $2.75 per square and up. Ask for free samples. We can furnish anything needed in Roofing, Siding or Ceiling.

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Here again we show the lowest price ever known for roofing of quality. This smooth surfaced roofing we are offering is our one-ply "Ajax" brand, and the price includes necessary cement and caps to lay it, this price is f. o. b. Chicago; at 85c per square, we pay the freight in full to any point East of Kansas and Nebraska and North of the Ohio River, provided your order is for at least 3 squares. Prices to other points on application.

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There is no change in our business, except that in the future the four Harris Brothers will advertise and sell their goods, heretofore advertised and sold under the name of the CHICAGO HOUSE-WRECKING COMPANY, under the new name of HARRIS BROTHERS COMPANY.

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Consider what becomes of the stock of goods, when a manufacturer or big retail merchant goes bankrupt or "busted" as the saying goes. It is estimated that about ten thousand merchants annually meet with business disaster—this is why our company exists. If the stocks are sufficiently large and the goods are new and desirable, they find their natural way to our great forty acre plant for distribution at a small added profit, to our thousands of customers, who in this way get the benefit of wonderful bargains. In many cases our prices do not even represent the original cost of production. We stand foremost in our line. We recognize no competition. That's why we are called "THE GREAT PRICE WRECKERS."

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We guarantee absolute and complete satisfaction. There is no half way about this guarantee. Every purchase you make from us will be exactly as represented and you will be satisfied in every way, or we will make such just amends as are within our power. We will take back any unsatisfactory article at our freight expense both ways and refund your purchase price. We refer as to our responsibility to the publisher of this or any other publication or any bank or express company and to the public at large.

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Our stock includes practically "everything under the sun." It's in truth, from a needle to a locomotive. No matter what your vocation, or what position in life you occupy, or what your business, or how great a merchant you are, you have use for us, and we have the goods that you can buy from us to a decided advantage. The quicker you learn to recognize this fact, the sooner you will be "putting money in your pocket."

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Barb Wire Less Than 2c Per Rod

New Galvanized, heavy weight barbwire, put up on reels about 100 lbs. to the reel. Lot 2-CD-36 per 100 lbs. $1.95. Galvanized barb wire. Light weight, best grade, best made. Put up exactly 80 rods to reel, 2-point barbs. Lot 2-CD-28, per reel, $1.40.

100 HANDY ASSORTMENT OF WIRE NAILS

WIRE NAILS, Per Keg, $1.28

5,000 kegs, put up 100 lbs. to the keg mixed, all kinds together, regular nails, such as made by nail factories. Lot 2-CD 33, price per keg, $1.28. 1,000 kegs of 10 penny-weight regular new wire nails, 100 lbs. to the keg, while they last, per keg, $1.85. Write for our free Wire and Fence Catalogue. Gives valuable information to any land owner. Fill in the coupon below.

SMOOTH GALVANIZED WIRE 100 lbs. $1.00

Suitable for fences stay wires or any ordinary purpose. This wire is irregular, in length, ranges from 50 to 250 ft. and one gauge only to a coil. $1.00 per 100 lbs. Is in lots of 1000 lbs. Write for special quotations in other quantities.

15c per Rod Buys Heavy Hog Fencing

Here is another one of our remarkable bargains. A good heavy fence, bought from Ohio flooded factory, perfectly adapted for hogs and general farm purposes, 26 in. high, square mesh, put up in suitable size rolls. Lot 2-CD-31, price per rod 15c. Other heights in proportion. Staples, 100 lbs., $1.75.

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LETTERS FROM CUSTOMERS

$1,000.00 Saved

Everything arrived in good condition. I saved on the building; also heating plant and bathroom outfit about $1000.00 as this kind of lumber would be very dear here.

Signed (LEWIS YOUNG, Pennsylvania.

$700.00 Saved

I am perfectly satisfied. Don't be backward in referring to me, for you have done more than you agreed to. I saved $700.00 and also got better material, and a better house.

(Signed) JOHN J. DUNN, Ohio.

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The furnace I got from you is perfect in every way. I would not be without it one winter for double its price. If farmers only knew how easy it is to install it, they would not be without it.

(Signed) HENRY D. CHARTER, Canada.

Used 12 Years and In Good Condition

Some 10 or 12 years ago, I bought quite a bill of Black Corrugated Roofing from you, and only painted it twice since I laid it, and it is in just as good condition today, as the day it was laid. Please send me your catalog, as I expect to put up a barn next Spring and am looking for something for a roof as good as that bought from you last time. (Signed) W. W. STODDARD Ohio.

Will Order More

Am pleased to say the roofing all here and in splendid shape. Allow me to congratulate you on prompt delivery. You will receive more orders from me. (Signed) D. DUCELLO.

Recommends Our Paint

I have used your Premier Paint in this salt atmosphere for the past four years and find it better for this climate than any paint I can buy, no matter what the price. (Signed) W. A. WEIDE, Florida.

$13 BUYS COMPLETE BATHTUB

This is a white enameled, cast iron, one-piece, heavy roll rim bathtub; fitted with the latest style nickel-plated trimmings, including Fuller double bath cocks for hot and cold water, nickel-plated connected waste and overflow and nickel-plated supply pipes. It is 5 ft. long and is good enough to answer the needs of any one. Lot 5CD-101.

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AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

ESTABLISHED 1880

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Headle Dr. T J
Rutgers College
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Growing Early Vegetable Plants.

By Prof. Paul Work, College of Agriculture, Cornell University.

At no time of the year are vegetables so prized as in the spring time and early summer. The housewife is eager to offer the "first of the season." Those who surround her table partake of the things her market basket affords with a keener relish than is enjoyed during the later months. Thus is it profitable for the commercial gardener to increase the cost of production in order that he may serve the early market. Thus does the home gardener take special pride in the speedy maturity of the first fruits of his labors.

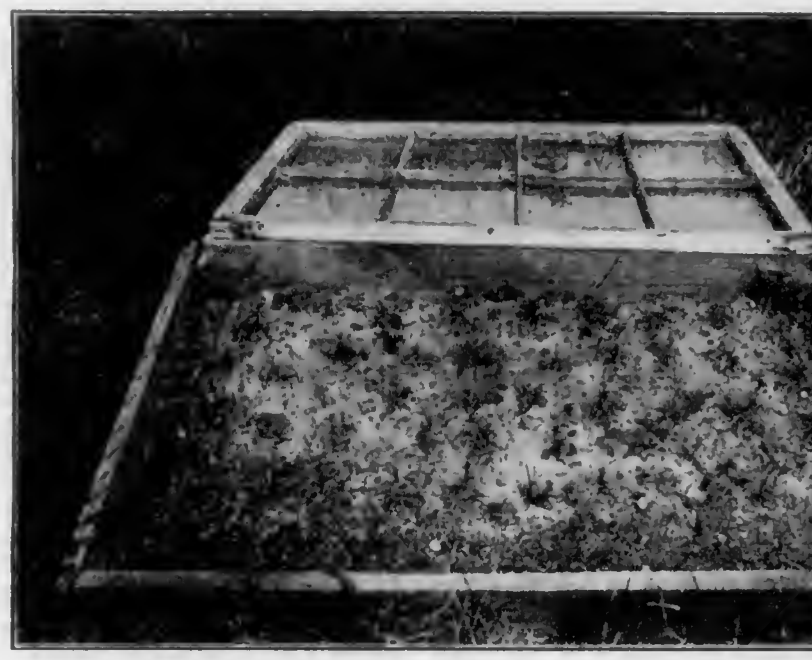
Many factors contribute toward early maturity of crops; climate, elevation, exposure, variety and strain of seed, character of soil, fertility, and care, all have their bearing. But the skilful garden strategist may steal a march and outflank his neighbor even tho many of these factors are against him; and if they favor him, he is well nigh invincible in the campaign for the good graces of the consumer. He may make his sowings under glass or in the house, and by the time the soil and season favor, he may be ready to set out of doors not a dormant seed, but a well grown plant. He gains not only in earliness itself, but he is assured of plants with a better root system than would otherwise be possible. With some crops, as the tomato, it is said the total yield is increased by the handling.

It must be clearly understood at the outset that different circumstances make desirable wide differences in practice. The methods of one grower vary widely from those of another. Perhaps the most important factor of all is keen watchfulness for differences and changes in the condition of plants. If one part of a block of plants seems not to grow so rapidly as another, the attendant goes at once in search of the cause and modifies conditions as may seem best, and may thus check the trouble before it is even visible to the uninitiated.

The greenhouse is to be preferred for the early starting of plants. It may be a large structure where plants are grown by thousands, or it may be a little manure-heated house of sash, or a lean-to by the side of the dwelling. When the number of plants is to be small, or if capital is lacking, hot beds serve well, and the usefullness of the kitchen window is not to be forgotten. In any case, there ought to be a cold frame for hardening the plants preparatory to setting them in the field.

The whole indoor life of the plant may be spent in the soil of raised benches or ground beds. Part of its life may be so spent, and then it may be set with others in a flat or plant box, or it may stand alone in a pot of clay or paper or in a berry box, or in a tin can from which the ragged top has been melted. Going still further, the seed may be sown in a vessel such as of, the last mentioned group, and it may remain there. The determination of these questions will depend upon the vegetable to be grown, upon the labor and space available, and upon the ideas of the grower.

Soil for plant growing ought to be of the finest physical quality. It should be prepared and stored in the fall. A sandy loam is best. In any case, and especially if a heavier type must be employed, an abundance of well-rotted manure or other humus-making material should be thoroly incorporated. A soil so prepared will absorb water readily and will hold it well, points which are exceedingly important in any phase of gardening and doubly so in growing plants. An over-abundance of fertility is not to be desired. A moderate amount is more conducive to hardiness and a stocky growth.



CONVENIENT FORM OF COLD FRAME FOR STARTING OR HARDENING VEGETABLE PLANTS

THE RESULTS SECURED IN SUCH A GREENHOUSE CAN BE DUPLICATED ON A SMALLER SCALE WITH WELL MADE HOT BEDS AND COLD FRAMES

Observe every precaution to secure a soil free of disease. The dangers from club root of cole crops, including cabbage, cauliflower, etc., and from damping-off fungi are especially serious. On account of the latter, old greenhouse soil ought not to be used without sterilization unless the grower has had no previous trouble, and even then a close watch should be maintained.

The next requirement is good seed. The cost of early crops is heavy, and one cannot afford greenhouse space for seed of poor germination or seed which will not produce good results in the field. In no case should seed be planted without previous testing. The time of sowing seed can not be arbitrarily determined. It will depend upon local conditions, upon the nature of facilities for plant growing, and upon the methods used. Experience is the only reliable teacher, altho valuable suggestions can often be gathered from neighbors. To secure strong, stocky cabbage plants in a section where outdoor setting may take place just after April 15, sowings may be made about February first. Tomatoes may be sown about a month later if it is desired to set large plants in the field. If smaller plants are preferred, sow later. Cucumbers and melons require only four or five weeks under glass. These suggestions are, however, general, and may be modified to meet special conditions.

With seed provided and soil ready, the next step is sowing. Many prefer flats because they are conveniently moved and because the shallow layer of soil permits an easy control of moisture relations. Thus, if a heavy watering is given and then in a few hours it becomes cloudy, and remains so for several days, the soil in the flat will not so long remain cold and soggy. It is usually better to sow in rows because the seedlings help each other thru the soil, and are more easily removed for transplanting without serious disturbance of the roots. It is also possible to water between the rows, thus avoiding chilling and danger of damping-off.

The rows should be marked off carefully and regularly. The corner of a square stick is very satisfactory for this purpose. Care should be taken to distribute the seed evenly. A thimble whose capacity has been modified with wax in the bottom makes a good measure for the smaller seeds, and other similar measures may be devised. However, many planters depend upon the eye for the necessary regularity. Eight to twelve seeds per inch of the smaller sorts are commonly sown, while melons and cucumbers should be spaced more thinly. There are two common methods of sowing. To work the seed over the forefinger by means of the thumb is common practice and is speedy for the expert. The envelope method is soon learned and skill is soon attained. A small amount of seed is placed in an envelope cut the short way. This is held in a flat position with the opening along the row, and the seed is evenly distributed by a gentle motion in the direction of the opening.

An even and firm covering is essential to a uniform stand. The depth varies with the kind of seed. In the greenhouse few need go deeper than one-quarter inch, and delicate sorts, as celery, should be barely covered. These latter may have the protection of cloth or burlap at first. This must be removed as soon as the seedlings break ground. Otherwise, in a day or so a lot of weak, white and spindling plants will result.

The successful care of seedlings until ready for transplanting is a matter of experience. Rules for watering and ventilation cannot be laid down, yet upon these success depends. In most cases the ideal calls for a plant that is short, sturdy, tough, and of comparatively dark color. To this end, the growth should not be too rapid. High temperature, lack of ventilation, too much water, and shade, all favor the damping-off fungus, and they favor a weakling growth. Too little water or a very low temperature stunts the plants, and with some especially the effect of a check is not outgrown for months after or even during the entire history of the plants.

Plants of cool season crops do well at 50 to 60 degrees by day and 10 degrees lower at night, and warm plants, as tomatoes and melons, may be kept 10 degrees warmer. The temperature should be higher during germination than afterward.

Farm Crop Notes

By
R. P. KESTER

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Farm Help

Queries continue to come in asking where farm help can be obtained. As stated before in this department, the lack of sufficient labor to properly work the farms is the most serious limiting factor to more extensive and intensive farming in this country. It was no common sight last harvest to see the work being done by the farmer, assisted only by children and women. An old gentleman who has been farming for 50 years said to me one day that he always made most money during panics and periods of "business depression" since it was possible at those times to get the necessary help. This, he said, was not due to lower farm wages paid at such times but because some men will work on farms when they can get nothing else to do, rather than starve.

There is evidently but one way to solve the farm labor problem, and that is for farmers to get together in every neighborhood and work it out in a co-operative way. A great many people that come to this country from European countries come from agricultural regions and are accustomed to farm work, as it is done there. They make good help and good citizens if not herded together in the contaminating influence of a city environment. Heretofore, the greater part of this labor has been diverted into other business as soon as it landed here, even if not lawfully contracted for before leaving the other side.

European people are accustomed to community life and they will not stay in the country isolated from each other. Why should not the farmers of a given neighborhood build a number of tenant houses at one place, making a little village, and providing a lot for each family of a quarter acre or a half acre of ground? It is useless for us to expect a return of the old days when a farmer could hire his neighbor's boys and thus get sufficient help to run his farm at full capacity. Changed conditions have made that a thing of the past, and we may as well make up our minds that we will have to solve the labor problem as other business men have solved it, that is, by providing reasonably steady employment and furnishing homes to live in.

Difficulties of Rural Improvement

A letter was received the other day from a farmer who evidently has the blues badly. He asks why men in other callings can get help, advice and favorable legislation so much more easily and quickly than can farmers. He asks if farmers have no real leaders; if we have, are they on to their job? He hopes that the time is not far distant when a real Moses will come forward and lead us out of the wilderness.

This letter was interesting reading. Having just finished a good dinner in the midst of a much needed vacation, it produced no bad effects. I am glad the good brother wrote it. I am sure he feels better now. There are wrongs to be righted and improvements that must be made, and the first step in that direction is for farmers to realize that the job of bringing these things about is up to themselves. We have the numbers and the strength. What we need most is to use them intelligently.

I remember a great, big, overgrown boy who was a schoolmate when I was a lad. He had the physical strength but lacked the moral courage to take care of himself. The little fellows picked at him and teased him and otherwise made his life miserable, when he could easily have put the whole pack of his little tormentors to flight and thus gained their respect instead of their contempt. He was the scape-goat for the bunch and often got the blame for the other boys' mischief. This is not given with any attempt to excuse the actions of the small boys, and yet their actions were possible because the big boy did not do his duty and exert himself.

Yes, there are men, and women too, who are laboring just as earnestly and honestly for the betterment of farmers and agricultural conditions as did Moses of old to bring his people out of bondage. But the simile may be carried further. Moses was forty years making that short journey because his people were rebellious, stiff-necked, were of divided purpose, and would not unite with a common mind for a common purpose. Hence, their progress was slow.

In addition to these things there are certain physical and sociological reasons why the work of advancement is slower with agriculture. People who follow other callings have more nearly similar conditions of life, work and experience than have farmers. Whether they be miners, iron-workers, factory hands, lumbermen, bankers, merchants, manufacturers, or what not, all those engaged in a particular calling have more or less similar work, similar experiences, similar needs, similar homes and similar ability. But there exists the widest possible difference in all these things among farmers. Farming is engaged in by every race of people, in all parts of the earth, with a wide range of customs, productions, climate, altitude, soils and intellectual ability. For these reasons it is more difficult to make laws, plans and regulations, etc., that will be helpful and satisfactory to all engaged in it than it is to do these things for any other class. These same differences explain why it is more difficult to find common ground upon which to organize and to work for class improvement.

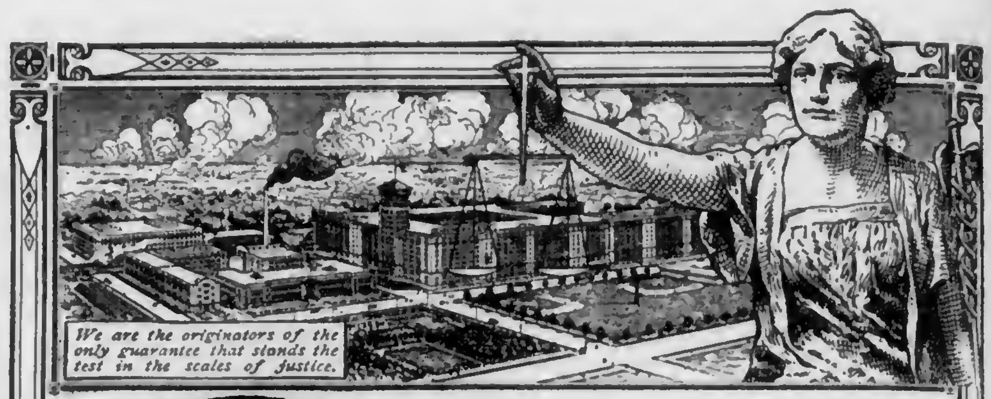
However, the work is going steadily on. Farmers must learn to distinguish between the true and the false; between the self-seeker and the real leader; between the demagogue and the statesman.

Fertilizing Potatoes.

C. A. W., York Co., Pa., writes, asking several questions concerning the application of fertilizers to potatoes, and wants to know where he can procure a machine for distributing it between the rows after the potatoes are up. He expresses a fear that much fertilizer is lost by leaching when it is applied before the potatoes are planted. Last year he applied 1200 lbs. per acre of a 2-8-10 mixture and had fairly good results. This year he proposes to apply 1,500 or 1,600 pounds, and would like to have a distributor that would apply about 500 lbs per acre at a time, cultivating it into the soil within four inches of the stalks. He plants in rows 30 inches apart and 12 inches in the row.

Some of these questions were discussed in a very recent issue of Pennsylvania Farmer, printed since this letter was written. Our friend need have no fear of the phosphoric acid and potash being leached if it is all applied to the soil before planting. If the nitrogen applied at that time is mostly of an organic material, like dried blood or takage, little will be lost, especially if a moderate amount is used. Where heavy applications of nitrogen are necessary it is preferable to give one or two applications of nitrate of soda after the potatoes are up and work it into the soil. In fact, this practice has brought better and more economical results at the Homestead Farm than the very heavy applications of a complete fertilizer. We could not get profit from more than 900 lbs. of fertilizer per acre on ground in fairly good condition, the potatoes being preceded by a clover crop. If our correspondent will increase the percentage of phosphoric acid, he may get better results and cheaper than to increase the whole amount. This has been found true on a good many Pennsylvania soils.

I do not know of any satisfactory machine for distributing between the rows, other than the one named by the inquirer. We apply nitrate of soda by hand, scattering about 100 pounds per acre and following with a cultivator. The material should not be allowed to fall on the plants when the leaves are wet.—R. P. K.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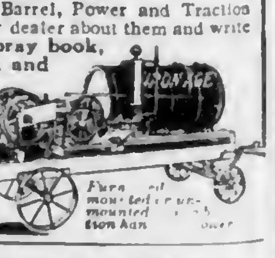

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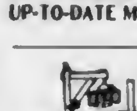

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State Board of Agricultur
Meeting.

The 37th annual meeting of the Pennsylvania State Board of Agriculture was held January 28 to 30. Secretary N. B. Critchfield this year introduced a new feature which proved highly successful and made the meetings better than ever before. He arranged with 16 chiefs of the various departments of the state government to make short addresses covering the work now being carried on by them, especially as it related to the farming interests. This gave the members of the Board, which is composed of one representative from each county, an opportunity to get a comprehensive idea of the governmental activities of the state.

Good Roads.—Governor Tener in his address at the opening session made the first mention of the good road question. Among other things he said "the people showed at the last election that they did not approve the bond issue as the correct means of raising money for road work. Now, if you have a better plan, let us have it. If direct taxation is the proper thing how shall we go about it? We have a comprehensive plan of building and now we must have a feasible plan of finance."

The report of the standing committee on Roads and Road Taxes mentioned the fact that "petty politics" are being played in too many places at the expense of the roads, and also that a lack of money and general ignorance on the subject are holding back the work. Commissioner Bigelow did not see fit to join the heads of the other departments in addressing the meeting, but sent one of his deputies, E. A. Jones, who read a paper on "Relation of Public Highways to Agricultural Pursuits." This was a great disappointment to many members of the board because Mr. Jones brought out little that was new or pertinent to the subject.

A committee was appointed to confer with the highway department and get information on the road question. This called forth considerable debate as some wanted the committee to report the following day and others wanted a report at the May meeting. It was finally decided to have both. The committee made a short report recommending that the board co-operate with the state board of Public Charities and ascertain if some of the money now appropriated for semi-state institutions could not be appropriated for roads, and also that it was the sense of the committee that not less than $3,000,000 a year should be appropriated for township roads. The work of the committee was continued. It will give the matter a thoro study, holding a number of conferences at Harrisburg with the various departments and officers, and will be expected to give a complete and tangible report at the May meeting. In a resolution the Board favored the passage of the Shackelford bill, now before Congress.

State Police.—Possibly the question which created the greatest interest aside was the work of the state police. Captain John C. Groome, superintendent of this force, made an able address on "Police Protection to Rural Districts." The force is now composed of 220 mounted men who last year traveled 191,000 miles of road and made 1,141 arrests. Little is heard about this work except in a case of strike or riot, which is the least of the police duty, as shown by the fact that last year only 10 arrests were made for riot. Last year 2,292 requests for assistance were received from small towns and rural districts, but due to the small appropriations made for the work only a small proportion of them could be granted. Two hundred men are sufficient to cover the parts of this state which can not afford proper police protection. Politics are unknown in the state constabulary and only the best men are picked for service after a mental, moral and physical examination and four month's probation in the training school.

Taxation.—Hon. A. W. Powell, auditor general of the State in his address on "The Farmer and Tax
presented an entirely new pha
this question when he stated t
his opinion taxes should be lev
cording to the ability of the cit
pay. This brought forth cons
discussion and while Mr. Pov
mitted that the question of wh
be judge of a man's ability
was the great problem to be so
wanted his audience to get aw
the old idea of regarding the
tution as sacred. He advised
ful study of Article 9, which d
this subject and to decide
just because our forefathers h
down to us as the law that w
continue to hand it down as
and only way to do this i
work.

Fish Culture.—The possibi
an acre of water on the farm i
ing food was clearly shown
N. R. Buller, Commissioner of F
in his address on "Fish Cultu
Source of Profit to the Farmer.
Buller recommended the Blue G
common bull head cat fish as th
for this purpose. The ponds nee
be deep enough so that they wi
freeze solid in winter, and three
after stocking each acre should
from five to six thousand poun
fish with no expenditure for foo

State Departments Represented.
addition to the state officials alre
mentioned the following addresses w
heard by the Board: "The Waters
Pennsylvania," by Hon. Samuel
Dixon, Commissioner of Health, "Carrying the College to the People," by Prof. M. S. McDowell, State College; "The Publicity End of the State Government," Hon. A. Nevin Pomeroy, supt. public printing; "Progress in the School and on the Farm," Dr. N. C. Schaeffer, supt. public instruction; "Better Schools a Pressing Need of Agriculture," Hon. Henry Houck, secretary of internal affairs; "Institute and Advisory Work," Hon. A. L. Martin, deputy secretary of agriculture; "Labor and Safety Laws of Pennsylvania," Hon. John Price Jackson, commissioner of Labor and Industry; "The Farmer and Legislation," Hon. Wm. M. Hargest, attorney general's department; "Fire Prevention," Hon. Jos. H. Baldwin, State Fire Marshal and "The Value of Bird Protection," Dr. Joseph Kalbfus, secretary game commission.

Commodities Act.—The injustice of the recent law making 50 pounds the legal weight of a bushel of apples was commented on by Prof. H. A. Surface. He stated that the average weight in this state of a measured bushel is from 40 to 43 pounds and that some early varieties weigh as little as 38 pounds. Under these conditions in some instances it will be necessary for the farmers to give a peck of apples free in order to comply with the new law.

Resolutions.—The Board passed a resolution instructing the legislative committee to work for a law requiring all commercial fertilizing tags to specify the sources from which the nitrogen, potash and phosphoric acid were obtained. This is aimed for one thing at the large amount of leather scraps now used in some mixtures, which altho containing nitrogen is of little use to a plant. A resolution was passed favoring Philadelphia as the place for the national corn show in 1915. A resolution offered regarding the places most suitable for supervisors conventions in connection with the highway department was held over until the May meeting.

The annual election of officers resulted in the selection of B. F. Killam, of Pike, J. H. Wilson, of Clarion and S. C. George, of Indiana as vice presidents for the coming year. A new executive committee was also elected as follows: A. V. Gormey, Jean K. Foulke, S. S. Blyholder, H. G. McGowan, John Schoener, W. F. Holtzer, J. Newton Glover and G. F. Barnes. The regular May meeting of the Board will be held at Stroudsburg in connection with the annual normal conference of the farmers' institute lecturers.—W.

when buyer and seller, grower and planter can meet together and discuss their troubles. More than this, those producing the highest grade selected can personally meet those who will buy and plant it. In this manner there will come into the best seed trade the element of personal responsibility between the grower in the North and the planter in the South, and the success of many of the southern growers will in a large degree depend upon the closeness of the personal contact they have with those who produce the seed they plant. Every large grower should plan next year to meet the man who produces the seed he is to plant at the next Maine Potato Day, in December 1914.—E. A. Rogers, Cumberland Co., Me.

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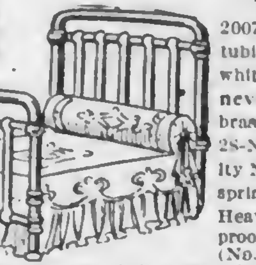

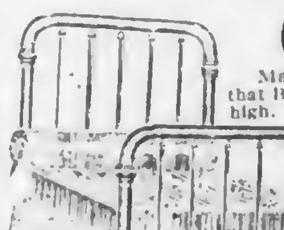

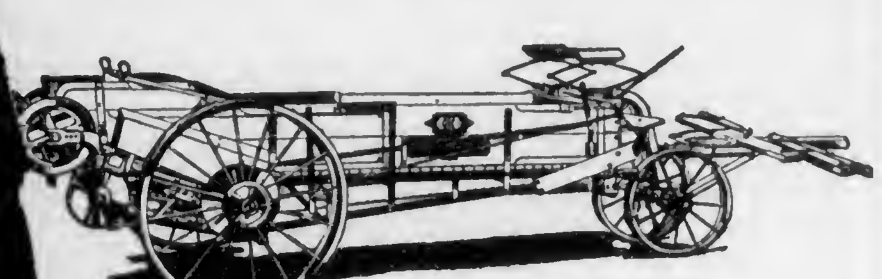

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ONION SEED. Yellow Danvers, Large Red Wethersfield, $1.10; Yellow Globe Danvers, $1.25 per pound postpaid.

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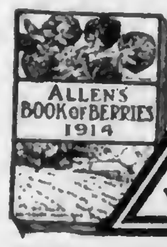

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WESTERN NEW YORK HORTICULTURAL SOCIETY

The meeting of the Western New York Horticultural Society was held at Rochester, January 28-30, with an attendance of 1,500 fruit growers.

President Barry in his address spoke of the care necessary in orchard practice in these times especially as regards spraying and cultivation, picking and packing, in order to meet competition.

Fruit Industries of New York.—Calvin J. Huson, Commissioner of Agriculture, traced the growth of the fruit industry in New York and brought out some interesting facts and figures, as to its present extent.

A Ten-Acre Orchard.—Prof. Hedrick, of the New York State Experiment Station, spoke upon "The Outgo and the Income of a 10-acre Orchard." He remarked that very few in the audience knew what their assets and liabilities actually were, and that many have gone into the fruit business having been encouraged by highly-colored reports. In keeping accounts the ten-year basis should be taken into consideration. Allowance must be made for interest on investment and depreciation of equipment and tools. The items in the cost of a barrel of apples are as follows: Interest on investment, $.21; taxes, .012; tilling, .063; pruning, .03, spraying, .096; cover crops, .023; superintending orchard, .25; picking, packing, sorting, handling, .244; cost of barrel, .36, total cost of barrel of apples, $1.29. Average selling cost, $2.60. Net profit, $1.31. The dividends from an acre worth $1,500, is 8¾ percent.

In this orchard, where both sod and tillage have been practiced, portions which have been under tillage returned for every dollar from the sod trees, $1.54, thus proving that tillage is more profitable. High color and size are antagonistic. The quality of cultivated apples is higher if anything. Potash is the least needed fertilizing element. If commercial fertilizers are used it is best to experiment and see if you are getting your money's worth. Acid phosphate is the most available form of phosphorus.

Farm Bureaus.—Lewis A. Toan discussed the Monroe County Farm Bureau, explaining that the farm bureau is the connecting link with the agricultural college, the experiment station and the farmer. It brings the agencies together. The agent visits the farmers upon request, at no expense. If he is not able to help he will send to the college, or other source.

Soil Fertility.—Dr. Jacob G. Whitman spoke on the question of "Soil Fertility." The following is from his address: "One of the most important points in obtaining the best quality of fruit is the location. The soil should be loose. The elements taken from the soil by the orchards must be considered in buying commercial fertilizers. The composition of the soil may be ascertained from the experiment station or agricultural college. The proportion of organic matter in the soil must be considered, for in this organic matter or humus, nitrogen is stored in the soil. There is no other factor in apple growing that is so important as the storing of water in the soil. Only about half of the rainfall is available for the crops as some is lost by evaporation, drainage, etc. There is not enough rain stored in the soil during the growing season, and water must be stored from the spring rainfalls if a good crop is expected. Humus aids in retaining water in the soil. With ordinary culture there is not enough organic matter kept in the soil. If a sod is left to itself it will gain organic matter. This does not prove that the soil needs a rest, as the humus may be supplied by cover crops and barnyard manures.

"It has been ascertained that there is a direct relation between lime and the quality of the soil. Lime also aids in the circulation of plant food in the soil. Lime converts the phosphate into available form. Altho trees may seem to grow well for a time without an application of nitrogen, yet sooner or later the growth of the trees will be checked by the lack of available nitrogen. For obtaining phosphorus the best source is acid phosphate. Basic slag is also satisfactory as it is as cheap as phosphate, namely about $12 per ton. Acid phosphate stimulates the soil activity to a very great extent. It may be used to advantage with lime. Plants suffering from lack of available potash are more easily destroyed by fungus. Acid phosphate does not make soil poorer, except as it makes other soil properties available and it does this by feeding the plants. Nitrate of soda should be applied early in the spring a few days before the trees begin to grow, as it is immediately available. Cover crops use up a large amount of moisture, thus competing with the trees. They may also stimulate undue wood growth and make the trees susceptible to diseases."

European Contribution to Agricultural Progress.—Dr. W. H. Jordan, Director of New York State Experiment Station said that it is an admitted fact today that production is not keeping up with consumption. Only 27 percent of tillable land is under cultivation. Because the profits of farming are not great enough the farmer is not justified in producing large crops. The price paid by the consumer must be larger than that now paid, but this difference may be reduced if the consumers buy their products in the most economical way. Goods are not standardized so the consumers may be certain they are getting high-class produce. The credit methods of European countries where small rural communities are organized for the purpose of lending money to the farmer upon liberal terms, these credit associations being controlled exclusively by farmers, cannot be duplicated in the United State owing to conditions here being very different. Scarcely any machinery is used in European communities as they are small farmers. They are submissive to authority and can stay banded together.

Parcel Post and the Farmer.—George T. Powell pointed out the necessity for a better system of direct dealing between consumer and producer. The greatest stumbling block in this particular is the lax methods of marketing in which products—good, bad or indifferent—are sold to a commission man and whatever he gives in return is accepted. He suggested that fruit growers first organize a society in a community or town, and afterward band together in a large organization, pointing out the necessity for all the members being bound by a contract to stand by the organization so that some of them be not tempted by a little higher price than they could get otherwise, to step aside. He pointed out the necessity for market places in every city where the consumer may buy direct from the farmer. Since the retail dealer must buy in large quantities products should be grown so that they may be sent by carloads.

Co-operation.—J. T. Bush emphasized

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LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till next fall for our money.—The extra profit will more than pay for it. We pay freight.
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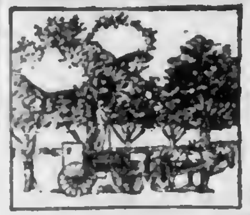

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More than 100,000 Farmers and Fruit Growers Use the STANDARD SPRAY PUMP

With it they spray their tallest orchard trees *from the ground* in half the time required by others. The knapsack attachment enables them to spray their potatoes and low growing crops at the rate of an acre an hour or better. They whitewash their barns and chicken coops and spray "dip" on their live stock with the Standard Spray Pump.

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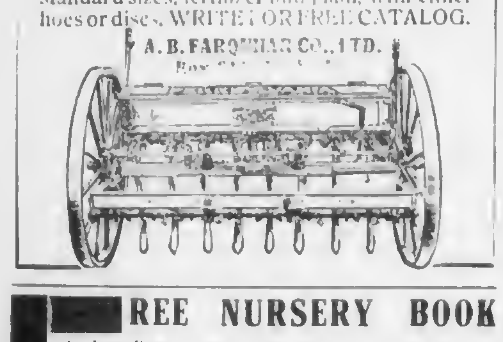

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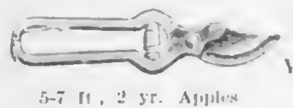

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5-7 ft., 2 yr. Apples	$12.50 for 100.
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Buy seed corn that you know is grown successfully in your section of the country.

1 bushel shelled from choice ears,	$2.00
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Clover, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer. Free from noxious weeds. Ask for samples.

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FOR SALE—Crimson Clover Seed, $1.00 bushel. Red Clover Seed, $8.50 to $9.50 bushel. Wilson's Black Soy Beans, $2.50 bu. Cow Peas, $2.25 to $2.50 bu. Country Ground Buckwheat Flour $3.50 bu. Beef Scrap $2.75 bag, or $50.00 ton. Joseph E. Holland, Milford, Delaware.

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Main crop varieties. Heavy yielders. No black leg or other dangerous diseases.

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Fruit Trees Grape Vines, Raspberry and Dewberry Plants, Asparagus Roots, etc. Catalog Free. Basil Perry, Georgetown, Delaware

the advantages of the co-operative exchange because of its opportunities for handling fruit and obtaining prices above those secured by the ordinary fruit grower.

Forests.—Hugh P. Baker, Dean of New York State College of Forestry, at Syracuse University showed the possibilities of forestry in New York and made a plea for the conservation of the farm woodlot. The rapid-growing evergreen trees, according to Dr. Baker, as spruce or pine, are the most profitable, since wood in these times is not now needed for strength, as concrete, steel and brick are more often used for building purposes. If creosote is applied to these soft woods when they are used for out-of-door purposes it will prevent decay and make them nearly as durable as harder woods.

Apple Production.—Prof. S. A. Beach, of Iowa State Agricultural College, who spoke on the "Outlook For the Apple Industry," illustrated his talk by lantern slides. He said production per capita had decreased nearly two-thirds.

Peach Growing.—George Friday, of Coloma, Mich., gave his experience in fruit growing. His peaches were grown on gravelly clay loam soil. His great trouble was with nursery stock. He cautioned against storing trees in a damp cellar for fear of mildew and advised home grown nursery stock. He said fall planting is best, in some localities. Setting trees in nursery rows and transplanting them later prevents stunting of growth thru change of soil. Holes for trees may be dug in the fall, filled with manure, which is taken out in the spring, care being taken not to have the soil so wet as to cause it to pack when trees are planted. Begin cultivation soon after planting.

Little but formation pruning should be done at the beginning. At about the fourth year, the trees are so pruned that all of the fruit will get a plentiful supply of sunshine. Peaches are headed low enough that about seven-eighths of the crop can be picked from the ground. Spraying for leaf curl should be done before the buds have started. It is essential to have a cover crop, as sooner or later the sod will need more humus. Stable manure is applied to supply nitrogen. This is usually placed just around the trees. All fruit should be under cultivation by the 15th of May. The Forkner harrow, 15 feet wide, is used for cultivating 18-foot rows. Thinning has been found profitable and should be commenced as early as possible. Picking is one of the most troublesome problems. Fruit is picked in half bushel baskets and not emptied. It is better to pick too soon than too late, as some fruit must be sent long distances.

Forms of Nitrogen.—"New Nitrogen Fertilizers" was the subject of an address by Dr. James A. Bissel, New York State College of Agriculture. He said that the supply of nitrogen is practically inexhaustible as it composes about four-fifths of the atmosphere, but that it must be made available. Nitrate of soda, sulphite of soda, beef scraps, and dried blood supply this element. He stated that the artificial sources of nitrogen will at the present rate of increase of consumption be exhausted in a comparatively short time. In manufacturing nitrogen from the air, the first process is the formation of nitric acid, which is combined with lime to form Calcium Nitrate, this compound containing about 12 percent nitrogen. One disadvantage is that it absorbs so much water that the cost of transportation is prohibitive. The second process results in the production of calcium cyanamide, containing about 15 percent nitrogen and 25 percent slate lime. One plant in America for producing it is located at Niagara Falls. These plants to be successful must be located near some kind of water power so the electricity needed may be cheaply generated. The calcium cyanamide is not suitable for top-dressing as it is not carried into the soil very easily by the rain and it is also poisonous to vegetation. It compares favorably with other forms of nitrogen. When the calcium cyanamide is mixed with acid phosphate it makes part of the phosphate unavailable. The nitrogen in peat has little value in comparison with other forms. A German investigator found out that certain plants are capable of taking nitrogen from the air—namely the class of legumes. There are also certain bacteria in the soil which take nitrogen from the air.

The fruit exhibit was in large part much like the one at the New York State Fruit Growers' Association two weeks before, also the display of machinery. W. C. Barry was re-elected president and John Hall, secretary. The next summer meeting will be held at Plattsburg, near Lake Champlain.—W. H. Jenkins, Delaware Co., N. Y.

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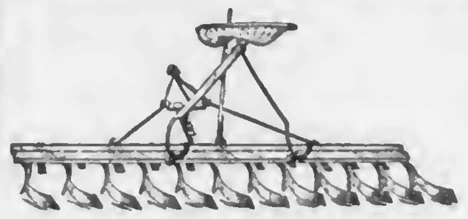
PULVERIZING HARROWS & CULTIVATOR



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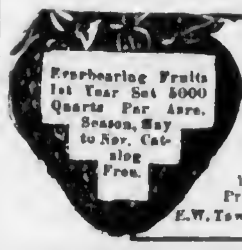

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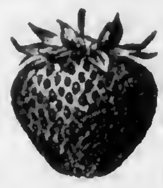

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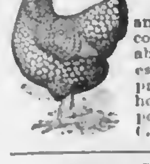

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Poultry

WINTER EGG PRODUCTION

The demand for strictly fresh eggs during the late fall and early winter far exceeds the supply. For this reason they sell at high prices, and poultry raisers who are able to make their hens lay at this season of the year reap rich rewards. In order to secure laying fowls it is necessary to keep in mind several fundamental precautions: 1. Have a heavy laying strain. 2. Use only early hatched fowls. 3. See that birds have careful housing. 4. Give intelligent care in the Spring. 5. Use proper feeds.

To make a success of winter egg production it is absolutely necessary to have a heavy laying strain of fowls. Get a strain of fowls which has been bred for several years for egg-production rather than for show purposes. Until we poultry men come to realize that egg laying is the foundation of the poultry business instead of fancy feathers, we will not be able to make poultry husbandry what it should be. Remember that in the strain there lies more importance than in the breed. One may get a certain strain of fowls, which are exceptionally good winter layers one year, while the next year he may buy a different strain of fowls of the same breed, which will show very little value as a winter egg producer even tho it may excel in show qualities.

It is rather hard to combine utility and fancy qualities in a single strain, to advantage. It may be done in the case of a few individuals but I have yet to see a large flock which excels both in the show room and as a market or egg-laying strain.

There is a fortune in the poultry business for the man who will devote time, money and work, toward producing a heavy laying strain of fowls, in almost any breed. This can only be done by keeping accurate records for a period of about six years or more and in this way discovering the heavy laying individuals, which by previous performance have proven themselves reproducers of heavy-laying individuals. Such methods require a little more time and money, more accurate records and greater perseverence on the part of the man behind the gun, but bring results in the end.

Early hatched pullets are the best for winter layers. Next to them come the yearling hens. The stock of the American class should be hatched during March and April, while April and May hatched pullets of the Mediterranean class are better as winter layers than if earlier hatched. If hatched too early the chances are too great that they will moult in the fall, in which case they are not much better than hens for producing early winter eggs in abundance. If hatched too late they will not mature before winter sets in and of course an immature fowl cannot be expected to be a very good winter layer.

Not only should winter layers be hatched early but they should be raised under natural conditions, which means giving them free range, plenty of shade, and common feeds. Don't make the mistake so many make, of yarding the poultry, to protect the garden. By all means fence in the garden even if it does take a few rods of fencing, and give the poultry the run of the farm.

Heavy layers must be constitutionally strong and only free range stock can be constitutionally strong. Pullets that have been in small yards never possess the vigor and strength necessary to stand the heavy strain of egg production.

Another point I wish to impress, is to hatch about twice as many pullets as are desired to keep over winter as layers, so that when fall comes there will be a large flock from which to select the pullets according to maturity, shape, vigor and size. The early maturing pullets, are generally the best layers, as are most of those that show large and early development of comb and wattles. They must, of course, have size and be constitutionally strong.

The next factor to consider is the matter of housing. Poultry houses should be so constructed as to provide a large amount of fresh air, an abundance of sunshine, and dry quarters; and they should allow for at least four square feet of floor space per bird. We have muslin curtains in all of our poultry houses. These we open and close with the rise and set of the sun, except on severe days, when they are left closed during the day time. With our average winters, we never have them closed all day long, oftener than about ten or fourteen days of the entire winter. If your poultry house is not equipped with some of these muslin drop curtains hinged at the top, I would earnestly advise a remodeling of the house to cover this feature. The best size of curtain is one about 30 inches wide by 5 feet long, located in the south as near to the roof as possible. Have the three ends of the poultry house, east, west and north absolutely air tight, and let all the fresh air during winter come in thru the south front. Allow no drafts in the poultry house and tolerate no dampness of any description. Dampness and drafts invariably cause colds and may develop roup.

It is well known that in spring hens produce eggs in abundance; in this natural laying season the fowls should have plenty of exercise, green food, grit, insects and a variety of grains, and a good winter egg yield is incompatible with conditions other than those obtaining during the abundant spring production. As a substitute for the spring exercise secured by the fowls in chasing bugs and insects, scatter the grain feed in winter in a very deep litter so that they must work for every particle they get. The litter should be 10 to 12 inches deep, of a good clean, dry and loose oat or wheat straw.

Our practice is to give water with chill taken off in the early morning. Give them enough to last until noon. Have the water dish always clean and sanitary. Next give them a feeding of a grain mixture made up of equal parts of corn and wheat. This feeding of the grains should be about half as much as they would eat if you gave them enough to fill up. Scatter the grain feedings in the deep litter and by the aid of a fork, work it well down. At noon they are watered again the same as in the morning. At this time one day they get a feeding of mangels, the next day a feeding of cabbage. This is alternated each day and only enough is fed to last until evening. All that is left then should be removed. They get a daily feeding of alfalfa hay or leaves, all they want to eat. In the winter time at about 4 o'clock in the afternoon give them their last feeding of grains for the day of the same mixture as in the morning, but at this feeding give them just a little more than they will eat up clean. The little that is left they will dig out early the next morning. They should go to roost with full crops. The last thing at night empty out all the water and milk dishes. In addition to the water they also have a dish of sweet skim or sour milk always before them.

A dry mash mixture of the following proportions is always before them in self-feeding hoppers: 3 parts by weight bran, 3 parts corn meal, 2 parts wheat middlings and 2 parts beef scrap. Grit and oyster shell are always accessible in self-feeding hoppers, hung on the wall. If you can get a fresh green cut bone give them a scarce feeding of it three times a week, but never feed tainted green cut bone or any other tainted food, as it deranges their digestive system, and does more harm than good. If you desire to force them for egg production it is a good idea to place a hopper full of beef scrap before them, so they can get it at all times.

Keep everything clean and sanitary, by cleaning the droppings out daily, renewing the scratching material as soon as it becomes solid, damp and broken up. Watch the droppings on the roost platform carefully. If they appear loose decrease the mangels, cabbage and beef scrap and increase the alfalfa feedings. A feeding of charcoal at this time is of great advantage.—F. W. Kazmeier, Cornell University.

USING ROUP CURES

Potassium permanganate and several of the commercial roup cures combine chemically with tin or iron. The result is that when they are given in the drinking water, they eat holes in the pans and fail to do the birds any good. Where the water clears or changes color soon after putting the medicine in, when a tin or galvanized pail is used, the trouble can generally be avoided by using a crock.—Kansas Industrialist.

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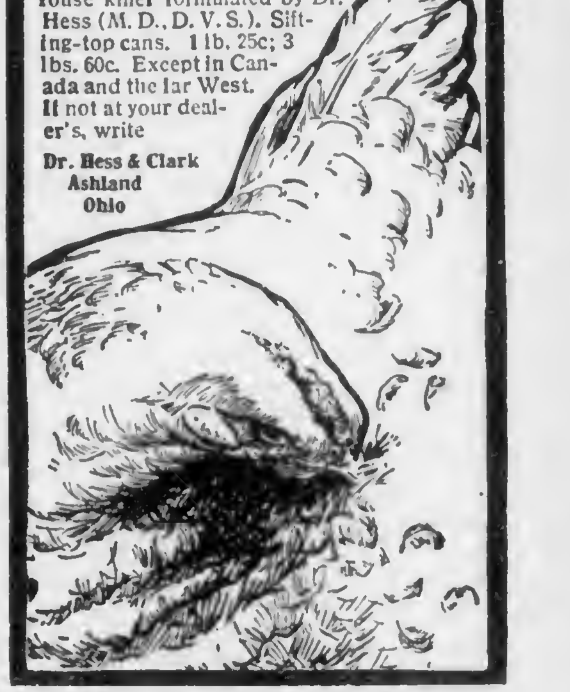
Kills Lice on Poultry and Farm Stock



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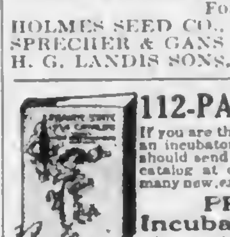

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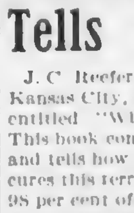

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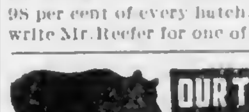

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Live Stock

NINE OUT OF TEN "SICK" HOGS HAVE HOG CHOLERA

The Department of Agriculture is in receipt of frequent inquiries concerning methods for distinguishing hog cholera from other swine diseases. The specialists in hog cholera investigations answer these inquiries as follows:

Altho at first thought this matter of diagnosis appears to be of prime importance, in reality it is not so important or so difficult as it seems. It is estimated that at least 90 percent of all deaths of hogs from disease in the United States are caused by hog cholera. Therefore, in the case of any fatal outbreak, the chances are about nine to one that the cause is hog cholera. It is true that other infections may and do frequently complicate outbreaks of hog cholera, but in such cases the germ of hog cholera is the primary cause of the disease; and if we can take care of the germ of hog cholera the pig will usually overcome the other infections himself.

The symptoms exhibited by hogs sick of hog cholera are not sufficiently distinct from those produced by other maladies so that a positive diagnosis can be made only thru a careful consideration of a number of other factors in connection with the symptoms. From a practical standpoint the important thing is to recognize hog cholera as soon as possible after its appearance in a herd in order that anti hog-cholera serum may be applied before the disease progresses too far. Good serum may be depended upon to protect well hogs, and even to cure a large percentage of those in the earliest stages of the disease, but it will not be of much avail when used upon hogs that are already visibly sick. The following suggestions to farmers are offered as an aid to the early recognition of hog cholera in a herd.

1. Keep posted concerning the condition and health of hogs on other farms in your neighborhood. Sick hogs on a neighboring farm are a positive menace, for the germs of hog cholera are easily carried on the feet of men or animals.

2. Look over your herd regularly in order that any sick hogs may be promptly discovered.

3. If any hogs in the herd are found to be "off feed" or appear in anywise sick, separate them immediately from the remainder of the herd, and keep them and the main herd under close observation daily. If there is a tendency for the disease to spread in the herd the trouble is quite probably hog cholera. This diagnosis may be confirmed by killing one of the sick animals and examining the organs in the manner described in Farmers' Bulletin 379, which may be had free by writing for it to the U. S. Department of Agriculture, Washington, D. C.

4. When the first symptoms of sickness are observed an immediate change of feed sometimes corrects the trouble. This is particularly true of swill-fed hogs.

5. If there is any tendency for the disease to spread in the herd do not temporize, but immediately treat the herd with serum from your State Live Stock Sanitary Board. Prompt administration of the serum is essential to success.

7. Remember that hog cholera kills millions of hogs where other diseases kill thousands. Dismiss from your mind all thought of such diseases as "lung plague," "infectious pneumonia," "pig typhoid," etc., for these are generally merely fanciful designations given to hog cholera by uninformed men.

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Several years ago I determined to keep sheep. My greatest trouble came in the form of a tramp or cur dog. But he never left the farm. I killed him and planted him without ceremony or flowers. I feel justified in that action and I intend to keep up the practice until county protection eliminates the pest. I have proved sheep to be the most profitable animal to keep on my farm, both from a meat and fertilizer viewpoint. Lambs finished early, February and March, demand the highest price for that grade meat. No other farm animals can be fed at the same average low cost.

I never mix mutton and wool. Either one is good. But mutton interests me most; that's why I prefer a Shropshire ewe and a Southdown ram. I do not insist that either be purebred, but they must show good. I buy ewes in July and breed them immediately. Early finished lambs sell at $10. I pasture the sheep in a field that will be turned under for corn the following year. Sheep eat weeds and their droppings make rich fertilizer spread at no cost to me. I never permit the ram to run with the ewes in pasture.

The sheep enclosure is well ventilated and faces the south. Doors and windows are screened with wire to keep out dogs. The outside enclosure where they get exercise and air, is also enclosed by wire, six feet high. I feed clover hay, fodder, cobmeal, oatmeal, mangles and roughage. And, when the lambs come, a small space is partitioned off for them and they are given cobmeal and oatmeal as a dry food. A finished lamb should wiegh 45 to 48 pounds, alive, in February or March. Winter or summer lambs do not interest me, because I can not compete with range stock which sells at a low figure.—A. L. R., Philadelphia Co., Pa.

SHOOTING HOGS

Many farmers slaughter hogs by sticking them and allowing them to bleed to death without first stunning them in any way, claiming that they bleed better and make better meat than when shot or stunned. It seems to me that this method is cruel and gives the animal unnecessary pain. Sometimes shooting causes the shoulders and neck to be somewhat bloodshot, if too large or too powerful a gun is used, but if a small rifle of the proper power is used this is not necessarily so.

Another very good way is to stun the hog with a sharp blow in the forehead just above the eyes. It can then be stuck with the knife and the hog will bleed as well as if only the knife is used in killing it.—A. J. Legg, Nicholas Co., W. Va.

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How to Get Better Roads.

Earth Roads Improved by Use of King Drag.

By Dr. DONALD McCASKEY.

Township Demonstration Roads

At a recent meeting of the State Board of Agriculture, Governor Tener said in substance: "Now that it has been proven that Pennsylvania does not want a bond issue, if you gentlemen have better plans, let us have them" This seemed to imply that the farmers of Pennsylvania were being charged with the blame for our bad roads. Personally, I felt differently about it. The great trouble is that our state highway officials are trying to solve this road improvement problem at too long a range. They do not seek to become acquainted with the farmer's side. From Mr. Bigelow's persistent indisposition to appear before public organizations thruout the state and to take the public into his confidence, it appears that he has no respect for the ideas and the wishes of the township taxpayers. We all know that the responsibilities of his office are tremendous. But when he fails to come out before public meetings or make accounting of his work to the people for whose road benefit his job was created it is a slap in the face that hurts.

So when Governor Tener requested suggestions, and when Mr. Bigelow did not appear (but sent his man Mr. Jones) and when no constructive and economical method was offered, it occurred to me to present a feasible, workable suggestion which would be as cheap as it is prompt in results. I presented the results obtained in Lancaster county by use of the King road drag patrol system, with the suggestion that it be taken up by the Highway Department, a single mile being dragged in each township as a demonstration for the benefit of the taxpayers of the townships. I remained to hear the report of the Good Roads Committee which had been in conference with the Highway Department. All it contained was a report of "no money" and the statement that the State Board of Charities gets too much money and the State Highway Department gets too little. It was what I would call a "choker" report. There was no action.

But I became interested in the reports of work done by the State Board of Agriculture, so remained. I was amazed at the scope of the work being done. Deputy Secretary Martin showed us that on less than $300,000 he had carried the farmers' institutes to over 2,500,000 individual farmers, scattered all over the state. The whole meeting seemed impregnated with an intense desire to help the township resident; to go out and carry the department's message of help and co-operation to the men and women on the farm. As I listened I wondered why in the world our Highway Department could not go out in a similar way and get better acquainted with the needs of the men and women who must travel our township roadways. The Department has the legal right. The township road law gives it the specific legal power. This law has been hammered and accused of being a steal on the part of our Highway Department. But there are some good provisions in that law. It gives the Deputy Highway Commissioner in charge of the Bureau of Township Highways all the power he could possibly hope or pray for. It certainly gives him the chance to prove that he is worthy of his position. Until our Highway Department does this, "choker" committees can resolute until the crack of doom and we will still have to travel thru the mud.

Paragraph 7 of Section 2 of the township road law, passed at the recent session of the Assembly, reads: "The Deputy or other officer in charge of the Bureau of Towship Highways, under the direction of the State Highway Commissioner shall call such state, county or township road meetings or conventions at such times and at such places as he shall deem wise, and direct officers and employes of his department to attend." This gives our Highway Department all the legal power it needs to inaugurate demonstration work and get down to the actual needs of the users of the rural earth roads. The defeat of the $50,000,000 bond issue ought to be sufficient evidence that our Highway Department can profit in real road improvement by adopting the policy of the Agricultural Department and go out among the townships and hold road-making conventions on the roads where the farmers can see by practical demonstration.

The proposal struck me as being so feasible and so full of promise in actual results that I asked for a vote of those present to indicate how many favored the bureau's patrolling a mile of earth road in each county with a drag. The Chairman very considerately ruled that it was "not proper to take a vote on the matter as there was no motion before the house." The matter was referred to another committee. Whether or not it will bring out another choker report remains to be seen. Please do not get the notion that I am a crank on the road subject. What I am after is to square our words with our actions. There is nothing to be gained by chasing ourselves around the block and putting up the bluff that we are doing all we can in fixing roads when down in our hearts we know that we are not.

THE KING DRAG PATROL ENDORSED

The articles in your paper on road improvement by Dr. Donald McCaskey, remind me of a little poetry I learned in school, the trend of which is as follows:

> "Truth crushed to earth shall rise
> again.
> The eternal years of God are her's,
> But error wounded writhes in pain
> And dies amid its worshipers."

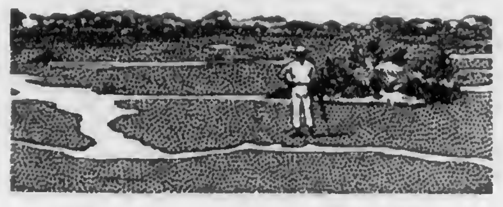
In these articles truth is coming to light again. I am not a politician, nor under obligation to any party or any particular bunch of men, nor a kicker or knocker on paying taxes. I am simply a plain Pennsylvania Dutch farmer looking for returns on taxes paid; and believe me, there never has been a time that a dollar has brought better returns than when Dr. McCaskey was president of our supervisor board. I have been a resident of East Lampeter for 44 years and never before have our roads been as good as they are under our present patrol system with patrolmen Petersheim, Conard, Landis and others on the job.

In my judgment the Doctor has received slight support for his untiring efforts for road improvement. His articles in your paper show that he is conservative as he is really giving facts in a very mild form.—J. Z. Beiler, Lancaster County, Pa.

NEW JERSEY ROAD NOTES

Farmers Fight Wheel Tax.—There is a State-Wide movement on the part of the farmers in New Jersey protesting to the Legislature against the passage of any bill which will impose a wheel tax on vehicles of all kinds. In connection with the discussion over keeping the roads of the State in repair and the large sums of money needed therefor, it has been suggested that all vehicles using the highways, including farm wagons and implements, should be taxed and the money added to the State road repair fund. If such a law were passed, it would require every farmer in the State to pay a vehicle tax of from twenty to fifty dollars a year, in addition to the regular taxes now paid. A prominent farmer said: "Practically every farm wagon that carries any load has wide tires, and is driven so slowly that it is absurd to say that damages an improved road. Macadam roads have always stood wagon traffic all right. It is the high-powered fifty and sixty-mile an hour automobiles that are destroying the State's good roads. The solution of the problem is to make the motorists pay a sufficient tax to keep in repair the roads ruined by them."

Horsemen Want Better Roads.—The Road Horse Association of New Jersey, has, by a unanimous vote, decided upon a campaign for better thorofares thruout the State, and also to co-operate with other organizations seeking relief in this direction. If necessary, the association will appeal to the Legislature to pass a law making the roads and highways safe for horse-drawn vehicles. This action applies not only to forbidding extra large auto-busses and motor trucks to use the public highways, but also, it applies to materials used in building roads and the oil spread on the surface to settle the dust. It is claimed that in many instances the roads have become so slippery as to make them very unsafe and dangerous for horses to travel.



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Philadelphia, Pa., February 14, 1914.

Demonstration Roads

The proposition of having a demonstration road in each township of the state, made in the article on page 9 of this issue is worthy of serious consideration. Because of variations in soil, topography and to a more limited extent in climatic conditions, the building of earth roads must vary with local conditions. In Lancaster County the King drag has done wonders in building as well as maintenance of roads. In Bedford County a system of building with the King drag for maintenance has been giving excellent results. In Crawford County greater attention to drainage was essential and a stone covering has been used cheaply and economically. Scarcely two counties of the state can handle their roads in exactly the same way. The township demonstration roads would not only develop the best methods for local conditions but would promote local interest and enthusiasm for good roads which would go far in the support of a permanant plan. We recently heard an official of the State Highway Department say that the farmers have failed as road makers; that under the old system of township work without state supervision the work was wasted and tax payers objected to the small amount of road money raised. He is right that taxpayers object to raising money to be wasted whether in actual road work or in expensive maintenance of a so-called system. Show the taxpayers actual results in road building, and a dollar's worth of work and road improvement for every dollar invested, and there will be no objection to road taxes. Show each township how to build its earth roads most economically and most efficiently, and there will be no lack of road interest. The demonstration road will do both. The State Highway Department has the legal power to take it up. The rural tax payers should press the demand for it. It is the logical starting point not only for township road improvement, but for the development of definite knowledge of how to handle the earth road problem under the varying conditions of the state.

Expert Advice

An outgrowth of the present wave of state and national interest in agricultural affairs is the organization of various agencies for giving expert advice to farmers. Some farmers feel inclined to resent all of it; others take it as merited service in their work too long deferred. It may be well for all farmers to keep fully informed on the source of proffered advice and judge motives carefully. The extension of established agricultural institutions, like the federal and state departments of agriculture, the agricultural colleges and experiment stations, to carry the results of their experimental and research work directly to the farmers is in direct line with modern teaching methods. These institutions are merely seeking to bring to all farmers the results of their work which were previously available to or made use of by a few. They are merely extending their fields of usefulness, and when their methods have been demonstrated and farmers have had the opportunity to see the practical value of their work, they should enjoy the fullest confidence of the farmers. But with this general movement for giving personal service to farm problems there has sprung up another class of so-called "experts" representing commercial interests and business organizations who sell their products to farmers. Educational bureaus, farm bureaus and service departments are being established by large commercial organizations, each with a farm expert in charge, to give expert advice to farmers along their particular line of farm interest. Some of these commercial bureaus are drawing men with national reputations and some are doing valuable work along general development lines. Farmers may get really valuable service from such agencies, but they should keep in mind the exact status of the expert and his personal interest in the nature of his advice. The state experiment station and the agricultural college is usually prepared to render service on the same subject and should be made use of in preference to any other agency which may be financially interested. In these days there are experts and experts.

Soy Beans

We have had an interesting exchange of experiences of readers in recent articles on the growing of soy beans. There can be little doubt that the crop has many features of value which should encourage its greater use in the East. Its feed and fertilizing value is but little below that of alfalfa. Farmers' Bulletin 22 credits alfalfa hay with 14.3 percent protein, 25 percent fiber, 42.7 percent nitrogen-free extract and 2.2 percent fat. It credits soy bean hay with 15.4 percent protein, 22.3 percent fiber, 38.6 percent nitrogen-free extract and 5.2 percent fat. Soy bean seed is given as containing 36.3 percent protein, (cottonseed meal contains about 40 percent) 3.9 percent fiber, 27.7 percent nitrogen-free extract and 18 percent fat. These figures show soy bean hay to be even slightly superior to alfalfa hay in protein content, and yet alfalfa has been boomed to such an extent in recent years that it has come to be regarded as mild sacriledge to utter a hint against its general adoption in all locations and on all soils. It is scarcely impossible to say too much in favor of alfalfa where it can be grown economically. Its heavy yield under favorable conditions, its value as a stock feed, its beneficial effect upon soil fertility because of its ability to store up nitrogen in the soil and penetrate deeply in rooting, all combine to make it one of the most profitable if not the very best forage crop to be grown. But it is impossible to make one crop fit all conditions, and there are sections in which a crop of alfalfa costs, in time and labor of securing a stand, about all it is worth. A contributor reported recently that his alfalfa had not been a failure, but that if he had charged it with all of the labor and loss of other crops while putting his soil in condition for alfalfa, his yield would cost him nearly as much as purchased mill feeds, ton for ton of food value. His is no doubt an exceptional case, but there are many farmers who have spent much time and energy in trying to make conditions right for the growing of alfalfa when they might have secured as large yields of the slightly less valuable soy beans with much less labor and expense. We have no desire to discourage efforts to grow alfalfa. It is succeeding in new sections every year and better knowledge of its exact requirements may make it possible to grow it economically in every section of the country. But farmers should not neglect the soy bean, which is almost of equal value, while experimenting with alfalfa.

Homelike Homes

Our copy books, in the good old days when penmanship was taught by copy, told us that the three most beautiful words in the English language are Mother, Home and Heaven. Most of us who have long since forgotten the monotony of copying this sentence have learned to appreciate its truth. Some of us may even be willing to go further and assert that Mother and Home have the making of Heaven. To those of us who have reached the stage of parenthood, the responsibility of that making and the influence of the Home thru our guidance is a matter of very deep concern. We may make pains-taking study of questions of domestic science, of housekeeping, house furnishing, feeding and sanitation, but home-making is a matter of the heart and not the head or hands. In these days of scientific guidance in everything that partains to our domestic and business life we are in danger of permitting scientific and hygienic housekeeping to interfere with real home-making. Our attention has been called to the case of a lady who was criticised for permitting her husband and children to "litter up" every room in her house, and defeat her best efforts at tidy house-keeping. Her reply was so full of the true mother sense and so sound in domestic philosophy that we want to pass it on to others. She said: "The marks of the little muddy feet upon the floor can be more easily removed than the stains where the little feet go into the highway of sin. The prints of little fingers upon the window pane cannot shut out the sunshine half so much as the shadow that darkens the heart over one who is but a name in the coming years. If my Joe finds home a refuge from care and his greatest happiness within its four walls, he can put his boots in the rocking chair and hang his coat on the floor any day in the week. And if I stand it and he enjoys it, I cannot see that it is anybody's business." Because of the old home which was and still is a refuge from care, because of the complete happiness which we enjoyed within its walls and because of the mother who "stood it" and who never wearied of work if it kept her boys contented in the wholesome, tho oftimes noisy, atmosphere of the old home, this plain statement of home philosophy appeals to us. The glow in that mother's eyes, as she sees her boys gather at the old home at every opportunity shows that her sense of permanent possession is ample payment for the littered rooms of the past.

From Farmer to Consumer

The Department of Labor has just issued figures showing comparative prices of wheat and flour for a period of years which are of interest in connection with the cost of food manufacture. Inasmuch as bread is the staple article of diet on the poor man's as well as the rich man's table, figures on the cost of flour may be taken as a reliable guide to the cost of handling actual necessities. In this case the figures do not deal with increases of cost except in an indirect way, but show more particularly the excess of price of flour over price of wheat. The average price per bushel of wheat of all grades paid farmers at 10 elevators in March and October of the three years of 1906, 1910 and 1911, was found to range from 56.1 to 97.8 cents, with a general average for those years of 79.4 cents. The average retail price of patent flour made from one bushel of wheat in the same months of the same years ranged from 76.9 cents to $1.04, with a general average of 95.9 cents. The excess in price of flour over the price of wheat varied from 6 to 20.8 cents, and averaged 16.5 cents. Thus the average excess in price of patent flour over the price of wheat represented an increase of about 20.7 percent. But patent flour is but one product obtained from the wheat. The wholesale price of products of one bushel of wheat other than patent flour averaged 28.8 cents for periods, and the average excess in total of prices of all products of one bushel over the price of a bushel of wheat averaged 45.3 cents. Thus the manufacture, transportation and sale of the products of wheat cost an excess of 57 percent over the cost of wheat. In other words, on the average of a period of five years, $1.00-wheat means $1.20-flour and $1.57-manufactured products per bushel of grain; or that the manufacture and distribution of flour costs practically one-half the production cost of wheat. This manufacturing and selling cost covers the handling by grain elevator, the railroad, the grain jobber or commission man, the flour mill, the flour jobber or wholesale grocer and the retail grocer. The investigation shows that as a rule the margins on manufactured products were lowest when wheat was highest. Every rise in the price of wheat was accompanied by a lower margin on flour and every fall in price by a higher margin, with a single exception during the five years.

STATE CAPITAL NEWS

Soil Study.—Pennsylvania is about to issue for the first time a comprehensive study of the soils of the various counties of the State, the results of a systematic investigation that has been carried on by the Department of Agriculture for the last few years. It is hoped to have the books ready for distribution some time this summer. This study of the soils of the State is the first of the kind ever made on a general plan. There have been geological surveys and studies of soils in various localities, but this work is entirely original and is expected to furnish valuable information about large areas of the State which are little known; and some believe that it will open a way to utilize some of the farms or deforested districts in northern counties which can be made to yield with a little care. The publication will probably comprise two volumes and the information to be given should be of value to people interested in the restoration of agriculture in many districts of the State.

New Agricultural Program.—The executive committee of the State Conservation Association at its meeting here a few days ago outlined a program for legislation for agricultural advancement which is not only decidedly progressive but, when one studies it, based on common sense. The plan is to draft bills embodying the ideas and have legislative candidates express their views. The only criticism that might be found is that nothing is said about readjustment of the state's appropriations, the equalization of taxation, or highway improvement. Probably the latter subject was left open because of the effort being made to work out a program on which everyone can agree. But why the other topics were not touched is not stated. The suggestions for centralization of agricultural advancement work, improvement of rural school conditions, conveyance of pupils at public expense when living a certain distance from their homes, co-operation in business pertaining to agriculture, use of schools for social centres and extension of demonstration work, and the increase of state police for rural patrol work are excellent and tho bills providing for them, if drafted on a practical basis, will doubtless receive much attention in the legislature. Of course, the program will require increased aid for rural school districts to enable these objects to be carried out, and this will commit the state to an increased appropriation.

Party Platforms.—As state conventions are unknown in Pennsylvania the meetings of the State committees will take the place of such gatherings and the resolutions adopted by them will stand as a declaration of principles. It will be quite interesting to watch how the resolutions will deal with the important issues. High sounding declarations about the return of rule to the people will doubtless abound, but the dwellers in the countryside will be more interested in what is to be said about apportionment of the state income. This is a subject which, in view of the recognition that agriculture must be aided and the education of the children furthered, supersedes demands that this or that man or set of men be eliminated from power. It will matter not that the state has a new set of rulers if there be no change in the way of apportioning the income.

Going To The Source.—It is probable that among the bills to go before the next legislature will be one to go to the root of the fertilizer business. Every meeting of an agricultural body here has brought complaints that fertilizers are sold which are open to suspicion and that the constituents are not what was expected. The system of examination now in vogue dates back a considerable period and there is a demand that the state agents be given authority to inspect plants and methods and that the mere purchase of samples and analysis should not be the end of the inspection work. Undoubtedly, there is some humbug in fertilizers or there would not be so many complaints, and the passage of a law enlarging the powers of the state agents would afford a means of protection and at the same time offer a safeguard to the manufacturer who has nothing to fear from the most rigid inspection. The operation of the cattle feed inspection law has driven from the state a good many compounds which were causes of complaint in years gone by and the amount of spurious or misbranded fertilizer sold has decreased very much, but apparently more power is needed.

Sealers and Dealers.—According to reports at the Capitol practically every county and city has now established inspection of weights and measures and the regulation of the means by which consumers receive their produce will attract much attention the remainder of the year. As to the justice of the "commodities" act, which has been criticised at a couple of meetings, time should show whether there has been any injustice done. The claim of the officials here is that the act is similar to the statutes in other states and that it is in accord with the square deal principle. People engaged in the fruit business reply that it is upsetting things generally and that there is little basis for the arguments in behalf of it. The sealers will have an opportunity to demonstrate what are the conditions and if the consumer has been getting the worst of it there will be small chance of getting by any amendment at next session of the legislature.

Forcing Out The Butter.—Millions of pounds of butter bought up from the creameries and farmers last spring which has since reposed in cold storage warehouses must come out of the storage places within the next forty days, say officials. Here and in Philadelphia alone two and a third million pounds are due to appear or be declared unsalable in Pennsylvania. Hence the outlook for a slump in butter prices, especially with the large consignments from Australia and Europe coming in under the new tariff, is rather strong ,altho the average farmer and creamery man is not worrying about it.

Agricultural Teachers Wanted.—According to State educational officials there is a big demand for teachers with a knowledge of agriculture from school districts where the addition of agricultural teaching to the course is contemplated next year. The normal schools have been asked for names of those who have given study to this subject and it is said that places for them will be waiting when the school bells ring in the fall. The extension of agricultural teaching has been rather slow in getting started, but according to those who supervise the schools it is because people are feeling their way and endeavoring to obtain practical courses which will give the boys and girls knowledge which

they can apply to advantage as soon as they leave school. The State Library is taking steps to provide for its traveling library service such books as will supplement what is taught in schools.

Passes and Free Service.—The Public Service commission has at last decided that employes of railroads can get passes for members of their families but the other questions which have arisen because of the operation of the act of 1913 have not yet been determined. Outside of churches, ministers, hospitals and charities not many people are concerned and a needless amount of time seems to have been consumed in reaching a decision. The biggest subject before the commission just now is water rates, which are apparently without much system in the State some very odd things having been turned up in complaints. The question of whether passes can be given in return for rights of way also hangs fire, altho if free transportation figures in the employment of men it is difficult to see why it can not be recognized when a part of a formal contract for a line thru one's land.

Road Drags.—According to officials of the State Highway Department the state owns almost 1500 road drags and they are located all over the state, having been used last fall in highway maintenance until the work ended because funds ran low. If, as contended there will be little money for road maintenance this year, these drags could be loaned to townships and put to work on the roads instead of being allowed to remain idle or to get lost. And the road superintendents, who will not have many men because of the shortage of funds, could put in their time instructing the supervisors and neighbors in securing the maximum use out of the drags when the spring repair time comes around.—Hamilton, Harrisburg, February, 9.

NEW JERSEY FARM NEWS

Potato Prices Increase.—Since the annual meeting a few weeks ago of the Monmouth County Farmers' Exchange, additional statistics of interest have been gathered by W. H. Ingling, the general manager. These new statistics show that farmers of the county who hold membership in the organization have profited to the extent of an increase of 50 cents a barrel for potatoes under exchange methods, or a total increase in revenue of $1,007,328 for the six exchange years over the previous six years. His figures also show that, thru a material reduction in price on standard fertilizers, brought about by the exchange, the farmers have saved $57,776 on their fertilizer bills.

South Jersey Exchange Prosperous.—A profit of 52 percent. on a capital of $28,410 is shown by the South Jersey Farmers' Exchange for its fifth year. More than $700,000 worth of business was transacted during the fiscal year, thru its 16 stations in Salem, Cumberland, Gloucester and Camden counties. However, no dividend was declared by the directors, in spite of the heavy profits, because it was desired to use the earnings in extending the business of the exchange. The surplus is now within a few hundred dollars of the total capitalization, or more than $28,000, and capital stock which sold at $5 a share now has a book value of nearly $10. There are more than 600 members in the exchange. Last year the exchange sold 722 carloads of potatoes for the farmers at an average price of 73 cents a bushel for prime stock and 26 cents a bushel for second size. Other farm produce was also handled. More farm supplies were sold thru the exchange last year than ever before, at a saving of several thousand dollars to members.

Cranberry News.—Prices for cranberries are higher now than growers and shippers have ever experienced. The growers say that commission men received most of the extra profits this year and they are now trying to find a way to benefit themselves when the prices are high. They point out that the actual jump in the price of cranberries has been made conspicuous by the fact that the market ratio of 3 to 1, of long standing between apple and cranberry quotations, has changed to a new ratio of 2 to 1. A special committee has been appointed by the cranberry growers to appear before the Legislature and ask for a new bill fixing a standard-sized cranberry barrel to conform to a new government standard which goes into effect July, 1915. Many barrels now used by Jersey shippers are said to violate the State law of weights and measures. It is said, however, growers will be permitted to use their present stock of barrels before the law is strictly enforced.

To Relieve Farmers From Trust Laws.—Relief for labor organizations and farmers from the restraints placed upon corporations by the new State corporation laws prohibiting combinations for the increasing of wages or the prices of commodities, is sought in a bill fathered by Assemblyman W. M. Wheatley, Democrat, of Salem county. The bill provides that it shall be "lawful for persons employed or seeking employment to enter into any arrangements on combinations with the view of lessening the hours of labor or of increasing their wages or bettering their conditions, and any arrangements, agreements or combinations among persons engaged in agriculture or horticulture, when made with the view of enhancing the prices of agricultural or horticultural products shall be lawful." It places restrictions on the granting of injunctions in any cases between laborers and employers, or between laborers themselves, growing out of a dispute concerning terms and conditions of employment, or in case of any combination of persons engaged in agriculture or horticulture to regulate the prices of their products. It further provides that under conditions such as stated, neither employes nor persons engaged in agriculture or horticulture shall be liable to indictment or prosecution for conspiracy in the courts of the State. This bill will afford, if enacted into law, the fullest protection to farmers' exchanges and dairy associations, and permit them to have something to say about fixing the prices of farm products, butter and milk.

Grade Crossings.—Senator Edge, of Atlantic County, has introduced a bill known as Senate Bill, No. 29 which if it becomes a law will compel the railroads to provide every grade crossing in the State with some safeguard for the public. Senator Edge in explaining the bill said it was introduced for the purpose of securing for the public some relief pending the elimination of grade crossings under the Fielder act, which elimination, it is agreed, will require at least thirty years. He pointed out that according to a report of the Public Utilities Commission there are 3,150 grade crossings in the State, 1,900 of which are unprotected.

The Fire Line Law.—Members of the State forest commission and of the various railroads operating in the State, have been conferring in reference to securing the passage of a new fire line law to take the place of that of 1909 which was dclared unconstitutional by the Court of Errors and Appeals last year. It is proposed to seek a practical re-enactment of the fire line law with such amendments as may be deemed necessary by the Attorney General's office to meet the court's objection that the law sought to compel the taking of private property without due process of law. The railroads expressed a desire that the new measure should rest in the commission authority to exercise discretion as to its enforcement, arguing that there is no justification for imposing the same conditions on railroads running thru rock or sparsely wooded territory as upon those running thru thick woodlands; and with this in view it is probable that when introduced the bill will contain discretionary features.

Convict Labor Successful.—The experiment of employing convict labor in clearing up the State farm of more than 1,000 acres along the Maurice river is proving a much greater success than even the most sanguine expected. When this land is once cleared and put into shape for growing crops, the State experiment station at New Brunswick will take hold. Not only will an attempt be made to make the farm self-supporting but it will be conducted as an experimental farm by the station authorities. This farm lies in the midst of the section known as the "pine-barrens." It is gratifying to know that an effort is now to be made to demonstrate the productive value of lands which have not been heretofore developed except thru private initiative.

Cranberry Growers Indignant.—The cranberry growers of this state have been rankled by the comparison of their picking system to that of the use of child labor in the factories and other city industries. Prof. John H. Voorhees, of the New Brunswick experiment station, who has done considerable work in the bogs during the past few years, declares that the child labor conditions have been exaggerated. He spent three weeks on a number of different cranberry bogs during the harvesting season to obtain data regarding some fertilizing experiments, and during that time had ample opportunity to observe the actual conditions as they exist. The children, little ones and big ones, boys and girls, go to the bogs with their parents when the whistle blows. They spend most of their time playing and when they get tired of play they run to the line of pickers and fall in with their parents and pick a few berries, then run off and play again. It requires about 5,000 pickers every year to gather the berries, and magazine writers have been claiming that about one-third of these were children, more than half of whom are under ten years of age. No one denies that these children are on the bogs at picking time, but the truth is they accompany their parents, not for work, but because it is deemed unwise to leave them alone at home.

State Beekeepers' Convention.—The recent convention of the beekeepers in this State was held at New Brunswick. Secretary Carr reported that New Jersey did not furnish sufficient honey to meet the demand and that considerable Colorado honey was sold in the state. It was also shown that of the 2,000 beekeepers in the state, the average number of colonies was seven to each. The yield of honey, it was declared, was not half what it should be under the normal conditions The state has encouraged this industry with an annual appropriation of $2,000, placed at the disposal of Dr. Thomas J. Headlee, the State entomologist. Two plans, one to concentrate efforts against bee diseases in one section of the State and from the results carry on an educational campaign in the rest of the State, the other to examine every colony in the State periodically, (this plan to cost three times as much as the $2,000 allowed by the State for this work) were discussed. Many other problems were discussed by different speakers. C. H. Root, of Red Bank, was elected president for another year.

State May Secure Windfall.—When the House Committee on Roads finishes its conferences with the United States Office of Public Roads, it is possible that New Jersey may receive the sum of approximately $430,000. There may be a total of $25,000,000 available for roads in the States, of which our share will be the sum mentioned. The passage of the bill for this appropriation seems fairly well assured.

Grange Notes.—All the granges in Hunterdon county were represented at the county Pomona which was held at Flemington. District Deputy Fisher installed the following officers for the ensuing term of two years: Master, William Rittenhouse, Sergeantsville; overseer, Frank Bird, Stanton; lecturer, Spencer L. Dilts, Three Bridges; secretary, Edward Nief, Flemington; treasurer, Manning Sherman, Locktown. Vernon Valley Grange has installed officers as follows: Master, Charles L. Giveans; overseer, Thomas W. Mann; lecturer, Rev. H. C. Conger; secretary, Mrs. Emma P. Giveans; treasurer, Thomas W. DeKay. The members of Livingston Grange have adopted a good plan for the winter. At each meeting they discuss some phase of fruit growing or market gardening.

Public Schools And The Grange.—The differences which have been causing friction between the State board of education and the State grange have been adjusted, as the result of the recent conference between the former and a committee representing the latter. Concerning the tenure of office act, local boards of education will be given greater power in determining whether a teacher should be retained or dismissed. Particular objection was also made to the present pensioning laws. It was pointed out that in some instances a teacher, when pensioned, received more salary than when actually employed. This is brought about by the fact that many teachers receive sixty percent of their salary from the retirement fund and fifty percent more from the community. It was the view of some of the members of the committee that a teacher fifty-five years old is of greater service to a community than one younger. As to the construction of sanitary schoolhouses and the transportation of pupils, the laws will probably remain as they are.

Fish and Game Bills.—A number of fish and game bills have been introduced. One provides that no license to hunt with firearms shall be issued to any person under 16 years of age. Another makes it illegal for any unnaturalized foreign born person to hunt for, or capture or kill any wild bird or animal, either game or otherwise, except in defense of personal property. It also makes it unlawful for any such person either to own or be possessed of any shot gun or rifle. This measure is inspired by the many shooting affrays in which foreign born residents have been engaged in North Jersey.—D. T. Hendrickson.

NEW YORK LETTER

Eastern New York Fruit Growers.—The annual meeting of the eastern New York Fruit Growers will be held at Poughkeepsie on February 19 and 20. Besides several state speakers there will be speakers from other states, among them Orlando Harrison, of Berlin, Md., and Senator S. L. Lupton, of Virginia. A strong program is provided. There will be an exhibit of spraying machinery and horticultural appartus. The state experiment station will exhibit apples and the state agricultural college will have an educational exhibit.

Pheasants Starving.—The pheasant is appreciated in Tompkins County and the game warden is his protector. During the past few weeks the snow has been so heavy or so hard that the birds could not get sufficient food for their needs, so the farmers were asked to scatter cheap grain on the snow and about the fields for the pheasants. The county fish and game club has also been actively interested in protecting the birds.

Agricultural Bills.—Among the bills recently introduced in the legislature of special interest to farmers is one by Senator Godfrey requiring the state to pay interest on the moneys due farmers whose cattle have been killed by the state. The farmers have waited long and patiently for this reimbursement and Senator Godfrey believes that they should have interest on the money owed them by the state. Another bill provides for the physical examination of cattle not only for tuberculosis but for other diseases and makes it compulsory. Heretofore it has been largely optional with the farmer. Also a bill has been started on its way thru the legislature for a bi-partisan highway commission to handle our highway affairs. Another measure provides that stock in transit shall not be kept on board cars longer that 24 hours without 10 hours off for rest and feeding. The present time limit is 36 hours. A market commission is called for in another bill which will soon be introduced and which it is said the governor favors. There will no dearth of farm legislation this year, or rather of proposed legislation, for probably not all will get thru.

Barge Canal Aftermath.—The barge canal is nearing completion but not so the settlement of the claims against the state growing out of the construction of the great waterway. These have accumulated until the attorney-general finds it necessary to recommend that a special tribunal modeled on the board of claims be created to dispose of the many claims that have arisen where differences of values of lands taken by the state is the issue. The total claims now amount to the large sum of $64,000,000. Last year the board of claims disposed of 482 cases and about 1133 are still pending.—D.

MARYLAND NOTES

Cannery Contracts.—Queen Ann County Canners are already making arrangements or contracts with farmers for next season's production of peas and tomatoes. Indications point to an increased acreage in all canning products the coming season. The canneries are now looked upon as a real blessing to the farmers. Many who had not previously realized much from regular rotation crops find raising canning products profitable.

A Co-operative Association. — Harford County has recently organized The Farmer's Co-operative Buying Association of Baltimore and Harford Counties, with the main office at Baldwin. Arrangements have been completed to supply seed potatoes, clover seed and fertilizers. Last year the farmers in the vicinity of Randallstown, Baltimore County, combined and purchased several car loads of fertilizer, getting it at 100-ton rates, which was a saving of several dollars a ton.

Breeders' Association.—A Jersey Cattle Breeders' Association has been formed in Harford County, with Judge William H. Harlan as president and treasurer and C. E. Lloyd, secretary. There are many extensive dairy farms in the County and fine herds of pure-bred Jerseys are becoming conspicuous.

Road Problems. —There is general complaint in all good road sections, that the roads have been made too smooth; that the automobile considerations have been the main thing. During the recent wet spell hundreds of horses fell on the good roads, on way to market, and a number of Harford County farmers after coming city-ward several miles, became disgusted, turned around and returned home. Farmers declare that on Sunday they are afraid to go on the road with teams to church on account of the rate of which automobiles go and the indifference they show other vehicles. There is a bill before the state legislature to limit the speed to 25 miles an hour, but that will have no effect in the country, where speed laws and all other laws seem to be ignored by automobile owners.—G. O. Brown.

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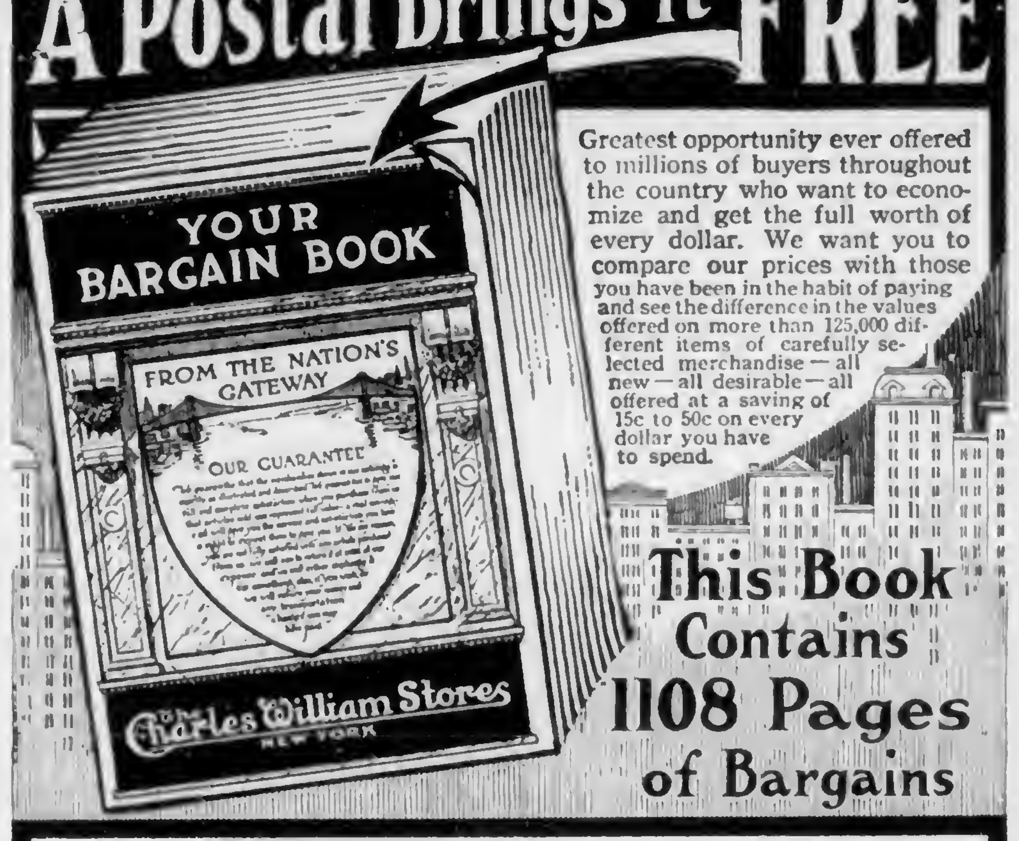

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Household

KNITTED DUTCH COLLAR

(Key to abbreviations used in the following directions: Sl. slip stitch; k, knit.)

Cast on 35 stitches.

1st Row.—Sl 1, k 16, narrow, over twice; narrow, k 6; (narrow, over) twice; k 1, over, narrow, k 1.

2nd Row.—K 16, seam 1, k 14, turn, leaving 4 stitches on the left-hand needle.

3rd Row.—Sl 1, k 21, (narrow, over) twice; k 3, over, k 2.

4th Row.—K across, including the 4 "left-over" stitches.

5th Row.—Sl 1, k 24, (narrow; over) twice, k 5, over, k 2.

6th Row.—Knit across.

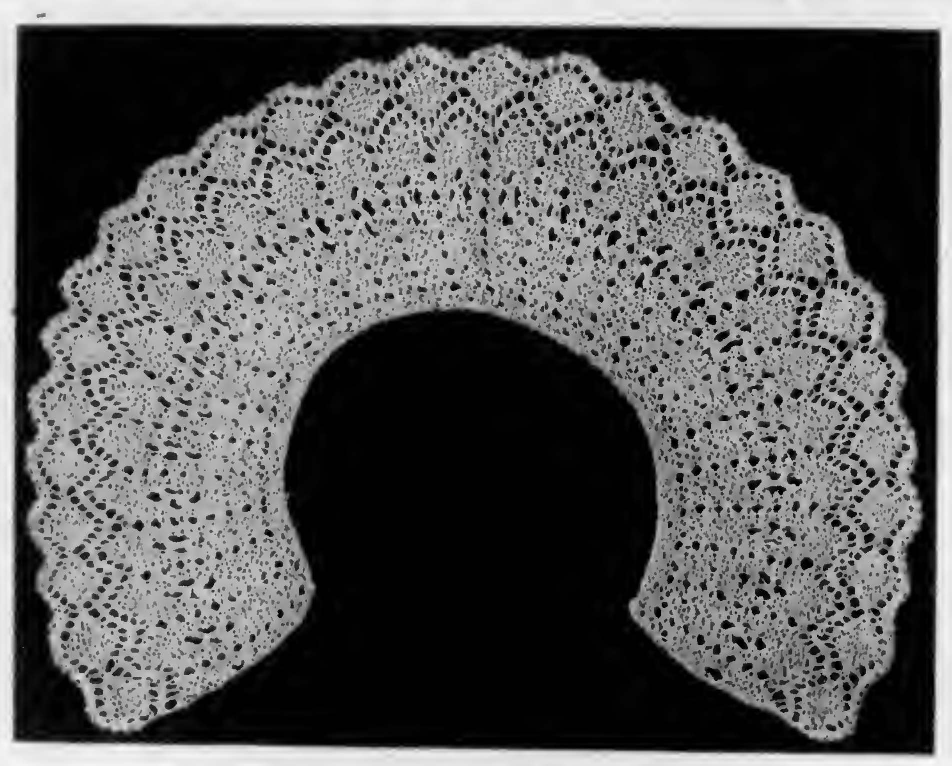
7th Row.—Sl 1, k 2, (over, narrow) 10 times; over, k 3 together; over, narrow, over; k 7, over, k 2.

8th Row.—Knit all but two stitches, turn.

9th Row.—Sl 1, k 22, (over, narrow) twice; k 5, narrow, over, k 2.

10th Row.—Knit all but 4, turn.

11th Row.—Sl 1, k 21, (over, narrow) twice; narrow, k 3, narrow, over, narrow, k 1.



A COMFORTABLE KNITTED DUTCH COLLAR.

12th Row.—Knit all but 6 stitches, turn.

13th Row.—Sl 1, k 10, narrow, over twice narrow, k 6 (over, narrow) twice; k 1, narrow, over, narrow, k 1.

14th Row.—K 17, seam 1, k 10, turn.

15th Row.—Sl 1, k 6, (narrow, over, twice, narrow) twice; k 5, over, narrow, over, k 3 together; over, narrow, k1.

16th Row.—K 14, seam 1, k 3, seam 1, k 16.

Repeat from the first.—Elma I. Locke.

THAT LITTLE DOWN-STAIRS BEDROOM

So many of the old-time farm-houses have a little down-stairs bedroom, just big enough to tempt one to use it, and not big enough to hold the necessary conveniences. A closet off this little room is an almost unheard-of luxury. There is no room for a chiffonier. There is no place to hang a garment except upon the much overburdened back of the door. Yet one is tempted to use the room because it is so handy in other respects, such a saver of climbing up and down stairs.

Sometimes space may be gained by removing the door and using a substantial curtain in its place; this makes the room warmer during cold weather if it opens into a living-room, but space and warmth are purchased at the price of seclusion from noise and interruptions.

Nothing helps out this small bedroom problem more than a good, strong screen; one of home manufacture will be quite satisfactory. If the frame must be rough and crude, bring the panel covering over the edges so as to completely cover the framework. Burlap makes a substantial and inexpensive covering.

When the screen is completed, fasten the back of each panel one or more cleats holding wardrobe hooks. Below these several strong pockets may be suspended for the storing of slippers and an extra pair of shoes. The hooks will hold all one's everyday clothes. Such a screen protects the bed from draughts at night when the window is wide open, as it should be.

Such a serviceable screen can often be made at home at practically no extra expense; it makes that tiny downstairs bed-room comfortably livable, and saves the housewife many steps.—Alice Margaret Ashton, Jefferson Co., N. Y.

SOME SOUTHERN COOKERY

Here are our methods of cooking some things relished by our family. I notice that some families, whose main diet consists of sweets, meats and more sweets, are often calling in the doctor. In our family, except when the babes were little, we have not had a doctor but twice, and then for accidents, and we have seven children and one grandchild. Is not that a pretty good recommendation for corn bread, beans, mush, milk, eggs, butter and fruit?

Opossum and Sweet Potatoes.—For best results procure the opossum alive. It should be plump and not bitten by dogs. Scald and scrape it, and remove entrails. Boil for one to three hours, according to size, in slightly salted water. When a fork will go thru the meat readily, remove it from the kettle, and have ready a mixture of pepper, sage and ginger; sprinkle this over the meat, and lay it in a roasting pan, with medium-sized sweet potatoes around it. Bake until thoroly brown, turning until all parts are crisp. Serve hot with corn bread and thick buttermilk or coffee, and you will agree that 'possum makes good eating.

Southern Corn Bread.—Break 1 egg into 3 pints of sour milk, add 1 scant teaspoonful soda, 1 level teaspoonful of salt and corn meal to make a thick batter. Beat briskly for several minutes, then pour into a hot, well-greased pan, and bake for one hour in a moderately hot oven.

Lye Hominy.—Place ¼ bushel of good wood ashes in an old tub, cover with boiling water, let stand a day or two, then strain off a gallon of the lye and pour it over 1 gallon of shelled corn. Boil until the outer hulls will slip off. Drain off the lye, wash the corn thru several waters, put into a kettle, adding a handful of salt; cover with water, and boil until the corn is soft adding more water as the water evaporates, and stirring to prevent scorching. (If you will cook the corn in a fireless cooker, you will not be bothered with watching to see that it does not boil dry or does not scorch, and the corn will be just as good.—Editor.) When done pack into crocks, and it will keep for several weeks in a low temperature. Fry it in meat drippings or serve in a cream sauce. This is preferred by many Southern appetites to ground hominy or samp.

Beans and Noodles.—Wash and parboil for one hour 1 quart of red kidney beans; drain dry, add 3 quarts boiling water, 1 level tablespoonful of salt and ½ pound fat pork. Boil until the beans become soft, then remove the meat and add more boiling water unless the beans are well covered.—(To Make The Noodles). Sift 1 pint of flour into a mixing bowl, add a pinch of salt, pour on boiling water to make a thick batter, drop into the beans by spoonfuls, and boil briskly for 5 minutes, then add ½ pint of sweet cream, and let boil up. Serve hot. Noodles made with boiling water are always light and fluffy. A bit of butter may be added if liked, but it should be well worked into the flour before pouring in the water.—Mrs. Dora B. Phillips, Washington Co., Tenn.

CLEANING SILVER

One of the best and cheapest "labor savers" I ever made is my silver-cleaning pan. I bought an agate dish-pan, 18 inches in diameter, and a piece of zinc to fit in the bottom. When my silver looks dark, I put it on the zinc, on the bottom of the pan and cover it with cold water, adding a big spoonful of salt or baking soda. I can then leave it for a couple of hours and do some other work. At the end of that time I prepare a pan of hot water, to which I transfer the silver, a piece at a time, being careful not to let it dry at all. I take it out, one at a time, and wipe it dry on a piece of soft cloth and the silver shines beautifully.

There is nothing in it to hurt the silver in any way. The chemical action of the salt on the zinc works only on the oxide on the silver, and there is no hard work in rubbing. If you are in a hurry, put the pan on the stove, and when it boils it is ready to put in the clean water and wipe dry.—Evelyn Harris, Md.

WAFFLED POTATOES

Waffled potatoes make a pleasant change in the diet and are easily prepared. Wash and pare the potatoes, slice, with a vegetable slicer which comes for this purpose, and let stand in a bowl of cold water for two hours. Drain, and dry between towels. Fry in smoking hot fat, drain on white paper, and sprinkle with salt. Serve hot.

Conveyance Of Real Estate To Children.—A husband and wife have several married children and one who is single. Can they deed a part of their real estate to the unmarried child for a small consideration?—Bradford County Reader.—Yes. The entire real estate could be given to the unmarried child. A child, married or unmarried, has no interest in real estate owned by its parents which will prevent a conveyance to another child.—G. G. and H.

PENNSYLVANIA FARMER PATTERNS.

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.

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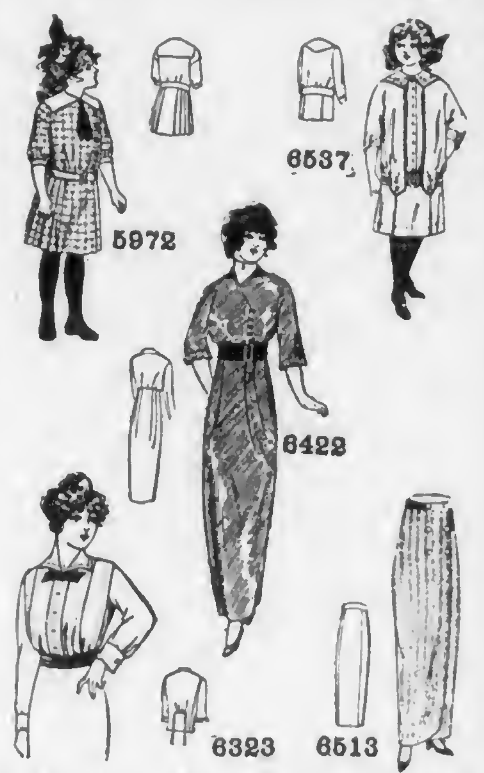
6537—Girls' Dress.—Cut in sizes 6 to 14 years. Size 8 requires 2½ yards of 36-inch material. Price 10 cents.



6323—Ladies' Tucked Shirt Waist.—Cut in sizes 34 to 42 inches, bust measure. Size 38 requires 3 yards of 36-inch material. Price 10 cents.

6513—Ladies' Five Gored Skirt.—Cut in sizes 22 to 32 inches, waist measure. Size 24 requires 4 yards of 36-inch material. Price 10 cents.

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The Dairy

COW FEEDING AND TESTING

Dairying was featured at the recent meetings of the Mercer County, N. J., Farm Bureau. At these meetings the chief speaker was A. S. Cook, Professor of Dairy Husbandry at the State Agricultural College, and in charge of all the farm operations there. Prof. Cook in his addresses first took up the subject along feeding lines. He said that a desirable dairy ration must first be balanced, that is, must have the proper quantities of digestible protein, carbohydrates and fat. These quantities had been determined by long study at the experiment stations, and should stand in the proportion of one pound of protein to from five to seven pounds of carbohydrates and fat. He called attention to the fact that the analysis on the outside of grain bags represented the total chemical analysis of the feed rather than the amount that was digestible. The protein in straight grains such as corn, oats and wheat, and the protein in straight mill by-products such as brewers' and distillers' grains have a high digestibility; while the protein in oat hulls and mill sweepings have a comparatively low digestibility. The more crude fiber found in a feed the less digestible it is.

In the second place, a good dairy ration must be succulent, that is, have that quality which is possessed by June pasture. This is furnished best and cheapest in the winter time by corn silage. At the Experiment Station affected a saving of 17 percent. Cottonseed meal, corn, distillers' grains and buckwheat middlings represent the cheapest source of protein, while in the second class come malt sprouts, dry brewers' grains and gluten. A little bran is usually added to the ration because of its stimulating quality on digestion, even tho bran is a high-priced feed, figuring simply on the nutrients it contains.

As a sample ration to be fed with 10 pounds of corn stover and 40 pounds corn silage, the following was given: 4 pounds of corn-and-cob meal, 1 pound of wheat bran, 2½ pounds of malt sprouts, and 2½ pounds of cottonseed meal. On account of the malt sprouts it will be better if this ration were moistened with water containing some stock molasses and the quantity increased slightly.

The above ration is enough for a 1,000-pound cow giving about 12 or 14 quarts of good quality milk. The cost of this ration per ton, with grains at present prices, corn-and-cob meal at $20 a ton containing 65 percent corn, Jersey wheat bran at $25 a ton, malt sprouts at $26 and cottonseed meal at $36, would be $26. This feed ration would contain 17.43 percent digestible protein and 23.78 percent total protein. Dried brewers' grains may be substituted for the malt sprouts if more convenient without materially changing the analysis. If clover hay is fed instead of the corn stover the amount of corn-and-cob meal can be increased about 100 pounds and 50 pounds taken off the malt sprouts and cottonseed meal. This will cheapen the grain ration still further.

Prof. Cook also told something about his work with cow-testing associations,

A WELL-BRED PROFIT-PRODUCER IS THE BEST INCENTIVE TO BETTER DAIRYING

corn silage is fed the year round with alfalfa hay; while green forage crops, such as corn and alfalfa, are given in addition in the summer when work is light, replacing most of the grain ration. Without the forage crops a ration is fed of one pound of grain to every four pounds of milk produced. If the dairyman has no silage, Prof. Cook recommended the use of roots, beet pulp, or soaking malt sprouts, dried grains or the entire grain ration with water in which a little molasses has been added for flavor. The feed should not be made sloppy but simply given as much water as it will soak up and remain moist.

The third requirement of a good dairy ration is palatability. Grains should be used which cows like and a sufficient variety so that they will eat all that is required. This is especially true in the roughage ration. Poor hay and silage should never be fed.

In the fourth place, a dairy ration should be economical, that is, should be made up of the cheapest feeds available. Alfalfa hay and corn silage with green alfalfa and green corn in summer make up the cheapest forms of roughage. The most economical grain ration varies somewhat with the market, but at present prices corn-and-cob meal at $20 or $22 is the cheapest basis of the ration and source of carbohydrates and fat. Corn-and-cob meal has practically the same feeding value, pound for pound, as straight corn meal and costs almost one-third less. In one experiment carried out for over one hundred days the New Jersey Experiment Station found that the feeding of corn-and-cob meal instead of corn meal

and of their value to the dairymen. A cow-testing association is made up of 24 or 25 dairymen owning about 500 cows. These men hire a man whom they call an official tester, who visits each member once a month and keeps a complete record of the pounds of milk, pounds of butter fat, pounds of feed and net profit of each individual cow. This record is computed for a year and furnished to each member of the association. The idea originated in Denmark and has been very successful there and in this country. Two associations are at present being successfully operated in New Jersey.

Of these associations, that in Sussex county is securing an increased milk production, with lower cost, and thereby increased profits to the dairymen. F. L. Champion, cow tester of this association reports that in several instances where the cost of production had increased because the members give better feed and more feed to their cows, the increased returns have more than paid for the larger cost of feeding. Twenty-one dairymen, who own 520 cows, are now members of the association, and all report increased incomes thru the tests. Mr. Champion tests each cow once a month. The milk is carefully weighed and the cost of the feed given the animal is computed. "Boarder" cows are disposed of as soon as possible, after it is learned that they do not pay their way. Thus, thru the association's work, a dairyman is able to separate the wheat from the chaff, and keep only the animals that pay.

It is to be hoped that the producer will eventually get a better price for

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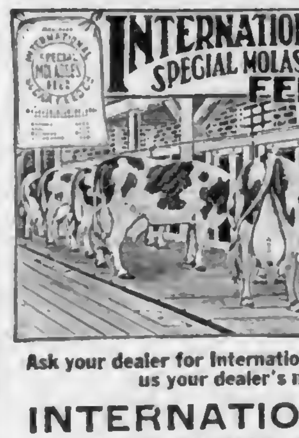
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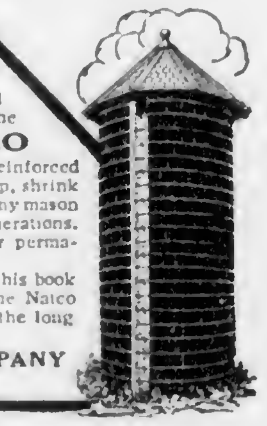

his milk. A few years ago a good dairy cow could be bought for from $35 to $50, while the same grade of cows now commands from $75 to $125. The increase in the cost of feed is another item to be considered, and again the increase in the cost of farm labor. The increase in taxes on farms is still another item which enters into the general cost and which adds to the evidence that the consumer will soon be called upon to pay more for the milk used in his household. The cost of distribution has also increased—horses and feed cost more, horse shoeing, help, bottles, caps,—a total average increase of about 50 percent. With all these increases added to the cost of production, the producer gets no more for his milk than he did under former conditions. However, it seems inevitable that the price of milk must go up to meet these conditions. Eight eggs are worth 32 cents, but they supply no more nutrients than a quart of milk costing but 8 cents. The present tendency of milk prices is upward, and it's dollars to doughnuts that as they go up, they will stay up.—D. T. Hendrickson, Monmouth County, N. J.

DAIRY RATION

R. D. G. asks for directions in balancing a dairy ration from materials indicated by the following reply:

The inquirer has two kinds of roughage, corn stover and mixed hay. It is rather desirable to have two roughages, but it would have been much more satisfactory if the mixed hay had contained a large amount of clover. As it is it requires a much larger amount of concentrates and these concentrates must be rich in protein. However, if he will feed about seven pounds of his mixed hay and five pounds of the corn fodder, one in the morning and the other in the evening and feed about twelve pounds of the following mixture the ration will be nearly balanced: 200 pounds bran, 100 pounds corn meal, 100 pounds gluten and 150 pounds linseed meal.

It is possible that if the prices had been given for the feeds it would have been possible to have figured one a little cheaper. However, this contains bran to give bulk, and with the linseed meal should have a good effect upon the digestive system. A satisfactory ration should always contain something succulent, such as silage or roots. Potatoes are not the most satisfactory roots to feed to dairy cows, but they are the one which the farmer often has. The trouble with feeding many potatoes is that they are inclined to scour the animal. However, I should think that the inquirer could feed these up to five pounds a day to each cow with satisfaction.—Prof. F. S. Putney, Penna State College.

MUNICIPAL RESTRICTIONS UPON SALE OF MILK

A. W. R., Montgomery Co., Pa., asks for a brief statement of the state law relative to the pasteurization of milk in city markets.

There is no state law in Pennsylvania requiring milk to be pasteurized before being offered for sale in city markets. The state law, in general, prohibits the sale of adulterated milk, and also of skimmed milk unless labeled as such, and empowers the proper branches of the municipal governments to inspect all milk offered for sale, to adopt necessary rules and regulations, and to require a license from persons who sell milk.

Each municipal government has power to enact reasonable ordinances in the exercise of its police power. Included within the valid exercises of this police power are regulations passed in the interest of the health, morals, and safety of the public. Unquestionably, ordinances regulating the sale of milk are within the police power if their requirements are reasonable and have a real tendency to protect the health of the people. There seems no doubt but that an ordinance requiring the pasteurization of all milk sold in city markets would be a reasonable regulation passed in the interests of the public health, and therefore a valid exercise of the police power.

It matters not that the person who offers the milk for sale resides outside of the city. If he takes the milk within the city for the purpose of selling it, he becomes subject to the municipal regulations, just as a person who enters the city in an automobile becomes subject to the traffic regulations, and the municipal authorities can prevent such sale unless their regulations are complied with, provided as above mentioned, that the regulations are reasonable.—G. G. & H.

GOOD HOLSTEIN PRICES

The Second Consignment Sale of the Liverpool Sale & Pedigree Company, January 27 and 28, drew a crowd of over 500. The contributors were mostly New York breeders with the addition of Bernard Meyers, of Finderne, N. J., and Patterson Brothers, of Wellsboro, Pa. The visitors came from many states of the Union, one of the largest buyers coming from Washington. A total of 178 animals was sold during the two days, and the total sales amounted to $48,180. The average was $270 which was certainly good, considering that many of the animals were young. Among the prices realized was $1,000 for the cow, Pauline Clyde Wayne, consigned by Stevens Brothers' Company and purchased by John Arfmann, of Middletown, N. Y.; $1,405, for the heifer, Finderne Countess Pontiac, consigned by Bernhard Meyers, and purchased by Oakhurst Farms, Gloversville, N. Y. The heifer calf, Doris King of the Pontiacs, was consigned by James Male, of New York. She was purchased for $810 by Jabez Smith of Newark Valley, N. Y., and was resold after the sale to William Bishop of Chimacum, Washington, for $900. Mr. Bishop was one of the largest buyers at the sale and his animals were of good individuality and high-class breeding.

The highest priced animal in the sale was King Pontiac Posch, a son of King of the Pontiacs from a 31-lb. granddaughter of DeKol 2d's Paul De Kol. He was purchased for $2,900 by C. W. Decker, of Newark Valley, N. Y. His consignor, Jabez Smith, re-purchased a half interest in this bull. The yearling bull, Sir Johanna Rag Apple De Kol, consigned by James Gibson of White Plains, N. Y., was purchased for $2,050 by Archie Reed, Jr., of Jamesville, Wis.

THE DAIRY COW AS A FARM RENOVATOR

The dairy cow is always at home. For three hundred and sixty-five nights and at least one hundred days she is kept where all her droppings can be saved. She returns to the soil a larger part of the fertility of the food she eats than any other living animal. In fact, 99 percent of all she eats except the small amount required to sustain life is returned to the soil. About 75 percent in her voidings is liquid and solid, and 24 percent is the by-products of her milk which are fed to other stock, and thus returned, less than one percent being sold as butter-fat.

When reckoning the profits of a dairy, these by-products are not often considered, but considering the increasing demand for commercial fertilizer on nearly all our farms and the depleted condition of many of them, the manure must be ranked high. Without the elements of fertility in the soil our receipts for fat would soon be gone. Three gallons of skim milk or butter milk, if properly fed, will produce one pound of dressed pork. The average cow will produce enough milk in a year to grow and fatten a two-hundred pound pig, with five bushels of corn to finish.

With proper care, the litter from these two animals will fertilize an acre of corn which will more than pay for the hauling and the tillage of the corn. Many of the profitable methods have been worked out on Eastern farms. There are few eastern farms of sixty acres that can not support 15 cows and if these were attended properly would yield more profit than if these acres were devoted entirely to grain.

I have mentioned only corn as a means of turning your manure into feed; in many places this could be more profitably done by raising alfalfa or sweet clover. Cattle may not readily take to this sweet clover, but when once they learn to eat it, they will leave alfalfa for it. It will seed itself for many years, unless pastured very hard. It is very rich in nitrogen as are all legumes and dairy cows do well on it. If dairy cows and legumes were on more of the eastern farms, there would be less occasion for costly commercial fertilizer and the soil would not suffer from their absence.—H. E. Roudabush, Center Co., Pa.

Injured Brain.—We have a bull that appears to be hurt in head, for he showed no bad symptoms until he had a fight with cow. This accident occurred last Saturday and on Sunday when let out of stable he appeared lightheaded. When turned out he usually walks in a circle, going to left. We poured sweet oil into his ear which appeared to make him some better. He has a good appetite, but seems unable to drink. W. W. M., East Waterford, Pa.—Give your bull 2 dr. potassium iodide at a dose, 3 times a day; also give ½ oz. bromide of potash at a dose, 3 times a day. His bowels should be kept open and active.

Another Oleo Question.—In the Court of Appeals there has recently been argued a question of peculiar interest, viz: Has the state a right to prohibit a person from selling or giving away with the sale of oleo, any coloring matter? The object would be to allow the customer to color the oleo for himself. The attorney general contends that the buyer would then be doing an act which the law sought to prohibit. He says the statute does not forbid the sale or gift of the coloring matter except at the precise time the sale of the oleo is made. It is an interesting proposition, to say the least.

Intensive Tillage.—No one farm implement has contributed more to the growth and possibilities of intensive tillage than the Cutaway harrow. Practical farmers are finding new uses for this machine every season, and its efficiency in old uses is demonstrated everywhere. A new booklet describing its construction and giving many valuable hints as to its use has recently been published under the title of "The Soil and Intensive Tillage." The booklet is free to our readers who will write to the Cutaway Harrow Co., 983 Main St., Higganum, Conn., asking for it.

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DAIRY CATTLE

HOLSTEINS

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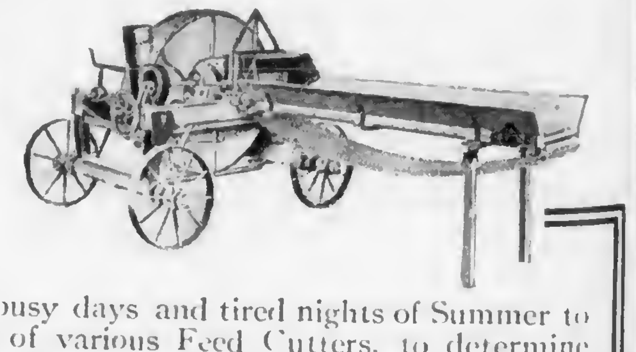

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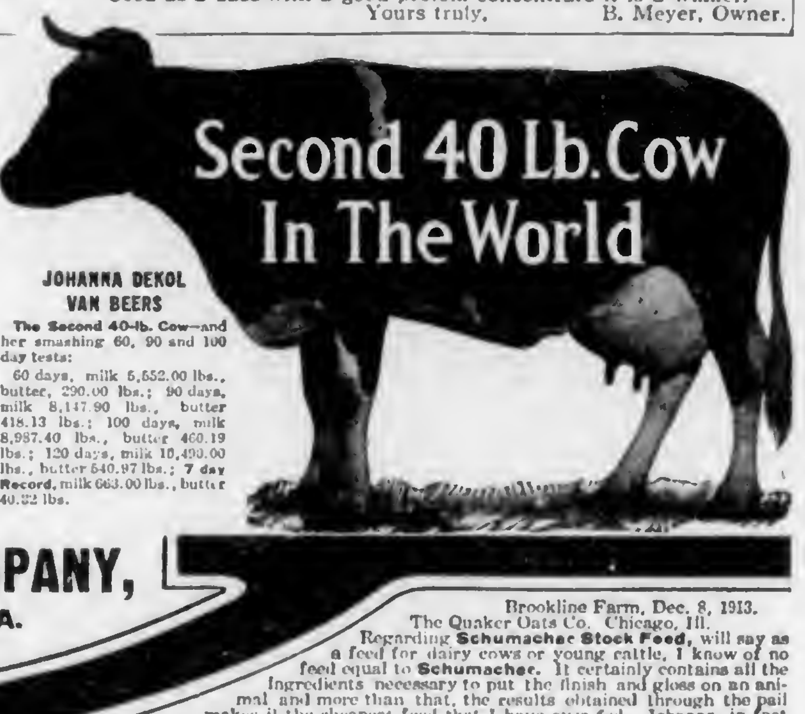

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Yours truly, T. E. Getzelman, Prop., Hampshire, Ill

Winston of the Prairie

By HAROLD BINDLOSS

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Chapter XX concluded.

“You mean, why do I not deny what you have no doubt heard?” he said. “What could one gain by that if you had heard the truth?”

Maud Barrington laughed softly. “Isn't the question useless?”

“No,” said Winston, a trifle hoarsely now.

The girl touched his arm almost imperiously as he turned his head again.

“Lance,” she said. “Men of your kind need not deal in subterfuge. The wheat and the bridge you built speak for you.”

“Still,” persisted Winston, and the girl checked him with a smile.

“I fancy you are wasting time,” she said. “Now, I wonder whether, when you were in England, you ever saw a play founded on an incident in the life of a once famous actor. At the time it rather appealed to me. The hero, with a chivalric purpose assumed various shortcomings he had really no sympathy with—but while there is, of course, no similarity beyond the generous impulse, between the cases—he did not do it clumsily. It is, however, a trifle difficult to understand what purpose you could have, and one cannot help fancying that you owe a little to Silverdale and yourself.”

It was a somewhat daring parallel, for Winston, who dare not look at his companion and saw that he had failed, knew the play.

“Isn't the subject a trifle difficult?” he asked.

“Then,” said Maud Barrington, “we will end it. Still, you promised that I should understand—a good deal—when the time came.”

Winston nodded gravely. “You shall,” he said.

Then, somewhat to his embarrassment, the two figures moved further across the window, and as they were silhouetted against the blue duskiness, he saw that there was an arm about the waist of the girl's white dress. He became sensible that Maud Barrington saw it too, and then that, perhaps to save the situation, she was smiling. The two figures, however, vanished, and a minute later a young girl in a long white dress came in, and stood still, apparently dismayed when she saw Maud Barrington. She did not notice Winston, who sat further in the shadow. He, however, saw her face suddenly crimson.

“Have you been here long?” she asked.

“Yes,” said Maud Barrington, with a significant glance towards the window. “At least ten minutes. I am sorry, but I really couldn't help it. It was very hot in the other room, and Allender was singing.”

“Then,” said the girl, with a little tremor in her voice, “you will not tell!”

“No,” said Maud Barrington. “But you must not do it again.”

The girl stooped swiftly and kissed her, then recoiled with a gasp when she saw the man, but Maud Barrington laughed.

“I think,” she said, “I can answer for Mr. Courthorne's silence. Still, when I have an opportunity, I am going to lecture you.”

Winston turned with a twinkle he could not quite repress in his eyes, and with a flutter of her dress the girl whisked away.

“I'm afraid this makes me an accessory, but I can only neglect my manifest duty, which would be to warn her mother,” said Maud Barrington.

“Is it a duty?” asked Winston, feeling that the further he drifted away from the previous topic the better it would be for him.

“Some people would fancy so,” said his companion. “Lily will have a good deal of money, by and by, and she is very young. Atterly has nothing but an unprofitable farm; but he is an honest lad, and I know she is very fond of him.”

“And would that count against the dollars?”

Maud Barrington laughed a little. “Yes,” she said quietly. “I think it would if the girl is wise. Even now such things do happen, but I fancy it is time I went back again.”

She moved away, but Winston stayed where he was until the lad came in with a cigar in his hand.

“Hallo, Courthorne!” he said. “Did you notice anybody pass the window a little while ago?”

“You are the first to come in thru it,” said Winston dryly. “The kind of things you wear admit of climbing.”

The lad glanced at him with a trace of embarrassment.

“I don't quite understand you, but I meant a man,” he said. “He was walking curiously, as if he was half-asleep, but he slipped round the corner of the building and I lost him.”

Winston laughed. “There's a want of finish in the tale, but you needn't worry about me. I didn't see a man.”

“There is rather less wisdom than usual in your remarks to-night, but I tell you I saw him,” said the lad.

He passed on, and a minute later there was a cry from the inner room. “It's there again! Can't you see the face at the window?”

Winston was in the larger room next moment, and saw, as a startled girl had evidently done, a face that showed distorted and white to ghastliness thru the window. He also recognized it, and running back thru the hall was outside in another few seconds. Courthorne was leaning against one of the casements as tho faint with weakness or pain, and collapsed when Winston dragged him backwards into the shadow. He had scarcely laid him down when the window opened, and Colonel Barrington's shoulders showed black against the light.

“Come outside alone, sir,” said Winston.

Barrington did so, and Winston stood so that no light fell on the pallid face in the grass. It's a man I have dealings with,” he said. “He has evidently ridden out from the settlement and fallen from his horse.”

“Why should he fall?” asked the Colonel.

Winston laughed. “There is a perfume about him that is tolerably conclusive. I was, however, on the point of going, and if you will tell your hired man to get my wagon out, I'll take him away quietly. You can make light of the affair to the others.”

“Yes,” said Barrington. “Unless you think the man is hurt, that would be best, but we'll keep him if you like.”

“No, sir. I couldn't trouble you,” said Winston hastily. “Men of his kind are also very hard to kill.”

Five minutes later he and the hired man hoisted Courthorne into the wagon and packed some hay about him, while, soon after the rattle of wheels sank into the silence of the prairie, the girl Maud Barrington had spoken to rejoined her companion.

“Could Courthorne have seen you coming in?” he asked.

“Yes,” said the girl, blushing. “He did.”

“Then it can't be helped, and, after all, Courthorne wouldn't talk, even if he wasn't what he is,” said the lad. “You don't know why, and I'm not going to tell you, but it wouldn't become him.”

“You don't mean Maud Barrington?” asked his companion.

“No,” said the lad, with a laugh. “Courthorne is not like me. He has no sense. It's quite another kind of a girl, you see.”

CHAPTER XXII

Colonel Barrington Is Convinced

It was not until early morning that Courthorne awakened from the stupor he sank into soon after Winston conveyed him into his homestead. First, however, he asked for a little food, and ate it with apparent difficulty. When Winston came in he looked up from the bed where he lay, with the dust still white upon his clothing, and his face showed gray and haggard in the creeping light.

“I'm feeling a trifle better now,” he said; “still, I scarcely fancy I could get up just yet. I gave you a little surprise last night?”

Winston nodded. “You did. Of course, I knew how much your promise was worth, but in view of the risks you ran, I had not expected you to run up at the Grange.”

“The risks!” said Courthorne, with an unpleasant smile.

“Yes,” said Winston wearily, “I have a good deal on hand I would like to finish up here and it will not take me long, but I am quite prepared to give myself up now, if it is necessary.”

Courthorne laughed. “I don't think you need, and it wouldn't be wise. You see, even if you made out your innocence, which you couldn't do, you rendered yourself an accessory by not denouncing me long ago. I fancy we can come to an understanding which would be pleasanter to both of us.”

“The difficulty,” said Winston, “is that an understanding is useless when made with a man who never keeps his word.”

“Well,” said Courthorne dryly, “we shall gain nothing by paying each other compliments, and whether you believe it or otherwise, it was not by intention I turned up at the Grange. I was coming here from a place west of the settlement, and you can see that I have been ill if you look at me. I counted too much on my strength, couldn't find a homestead where I could get anything to eat, and the rest mak be accounted for by the execrable brandy I had with me. Any way, the horse threw me and made off, and after lying under some willows a good deal of the day I dragged myself along until I saw a house.”

“That,” said Winston, “is beside the question. What do you want of me? Money in all probability. Well you will not get it.”

“I'm afraid I'm scarcely fit for a discussion now,” said Courthorne. “The fact is, it hurts me to talk, and there's an aggressiveness about you which isn't pleasant to a badly-shaken man. Wait until this evening, but there is no necessity for you to ride to the outpost before you have heard me.”

“I'm not sure it would be advisable to leave you here,” said Winston dryly.

Courthorne smiled ironically. “Use your eyes. Would any one expect me to get up and indulge in a fresh folly? Leave me a little brandy—I need it—and go about your work. You'll certainly find me here when you want me.”

Winston, glancing at the man's face, considered this very probable, and went out. He found his cook, who could be trusted, and said to him, “The man yonder is tolerably sick, and you'll let him have a little brandy and something to eat when he asks for it. Still, you'll bring the decanter away with you, and lock him in whenever you go out.”

The man nodded, and making a hasty breakfast, Winston, who had business at several outlying farms, mounted and rode away. It was evening before he returned, and found Courthorne lying in a big chair with a cigar in his hand, languidly debonair but apparently ill. His face was curiously pallid, and his eyes dimmer than they had been but there was a sardonic twinkle in them.

“You take a look at the decanter,” said the man, who went up with Winston, carrying a lamp. “He's been wanting brandy all the time, but it doesn't seem to have muddled him.”

Winston dismissed the man and sat down in front of Courthorne.

“Well?” he said.

Courthorne laughed. “You ought to be a witty man, tho one would scarcely charge you with that. You surmised correctly this morning. It is money I want.”

“You had my answer.”

“Of course. Still, I don't want very much in the meanwhile, and you haven't heard what led up to the demand, or why I came back to you. You are evidently not curious, but I'm going to tell you. Soon after I left you, I fell very sick, and lay in the saloon of a little desolate settlement for days. The place was suffocating, and the wind blew the alkali dust in. They had only horrible brandy, and bitter water to drink it with, and I lay there on my back, panting, with the flies crawling over me. I knew if I stayed any longer it would finish me, and when there came a merciful cool day I got myself into the saddle and started off to find you. I don't quite know how I made the journey, and during a good deal of it I couldn't see the prairie, but I knew you would feel there was an obligation on you to do something for me. Of course, I could put it differently.”

Winston had as little liking for Courthore as he had ever had, but he remembered the time when he had lain very sick in his lonely log hut. He also remembered that everything he now held belonged to this man.

“You made the bargain,” he said, less decisively.

Courthorne nodded. “Still, I fancy one of the conditions could be modified. Now, if I wait for another three months, I may be dead before the reckoning comes, and while that probably wouldn't grieve you, I could, when it appeared advisable, send for a magistrate and make a deposition.”

“You could,” said Winston. “I have, however, something of the same kind in contemplation.”

Courthorne smiled curiously. “I don't know that it will be necessary. Carry me on until you have sold your crop, and then make a reasonable offer, and it's probable you may still keep what you have at Silverdale. To be quite frank, I've a notion that my time in this world is tolerably limited, and I want a last taste of all it has to offer a man of my capacities before I leave it. One is long while dead, you know.”

Winston nodded, for he understood. He had also during the grim cares of the lean years known the fierce longing for one deep draught of the wine of pleasure, whatever it afterwards cost him.

“It was that which induced you to look for a little relaxation at the settlement at my expense,” he said. “A trifle paltry, wasn't it?”

Courthorne laughed. “It seems you don't know me yet. That was a frolic, indulged in out of humor, for your benefit. You see, your role demanded a good deal more ability than you ever displayed in it, and it did not seem fitting that a very puritanical and priggish person should pose as me at Silverdale. The little affair was the one touch of verisimilitude about the thing. No doubt my worthy connections are grieving over your lapse.”

“My sense of humor had never much chance of developing,” said Winston grimly. “What is the matter with you?”

“Pulmonary hemorrhage!” said Courthorne. “Perhaps it was born in me, but I never had much trouble until after that night in the snow at the river. Would you care to hear about it? We're not fond of each other, but after the steer-drivers I've been herding with, it's a relief to talk to a man of moderate intelligence.”

“Go on,” said Winston.

“Well,” said Courthorne, “when the trooper was close behind me, my horse went thru the ice, but somehow I crawled out. We were almost across the river, and it was snowing fast, while I had a fancy that I might have saved the horse, but, as the troopers would probably have seen a mounted man, I let him go. The stream sucked him under, and tho you may not believe it, I felt very mean when I saw nothing but the hole in the ice. Then, as the troopers didn't seem inclined to cross, I went on thru the snow, and, as it happened, blundered across Jardine's old shanty. There was still a little prairie hay in the place, and I lay in it until morning, dragging fresh armfuls around me as I burnt it in the stove. Did you ever spend a night, wet thru, in a place that was ten to twenty under freezing?”

“Yes,” said Winston dryly. “I have done it twice.”

“Well,” said Courthorne, “I fancy that night narrowed in my life for me, but I made out across the prairie in the morning, and as we had a good many friends up and down the country, one of them took care of me.”

Winston sat silent a while. The story had held his attention, and the frankness of the man who lay panting a little in his chair had its effect on him. There was no sound from the prairie, and the house was very still.

“Why did you kill Shannon?” he asked, at length.

“Is any one quite sure of his motives? said Courthorne. “The lad had done something which was difficult to forgive him, but I think I should have let him go if he hadn't recognized me. The world is tolerably good to the man who has no scruples, you see, and I took all it offered me, while it did not seem fitting that a clod of a trooper without capacity for enjoyment, or much more sensibility than the beast he rode, should put an end to all my opportunities. Still, it was only when he tried to warn his comrades he threw his last chance away.”

Winston shivered a little at the dispassionate brutality of the speech, and then checked the anger that came upon him.

(To be continued.)

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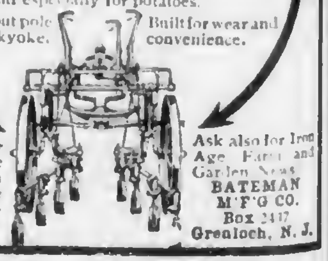

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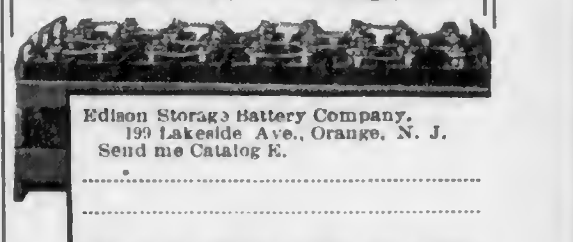

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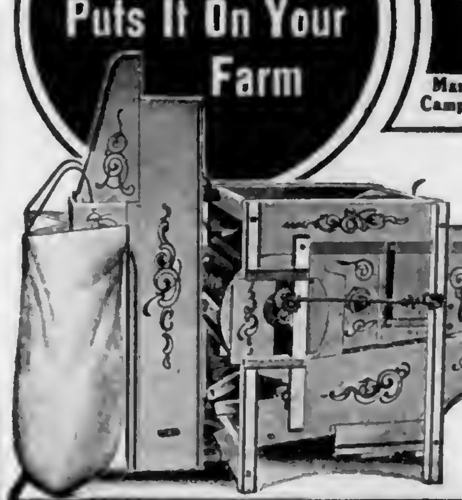

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 9, 1914.

High-grade butter stock sold rapidly at good prices. Receipts of desirable fresh eggs were kept well cleaned up and market generally ruled firm. Poultry of desirable size and quality were readily taken at full figures. Fruit and vegetable offerings were moderate and prices generally ruled steady, with trade rather quiet.

Poultry.—Fowls, 17@18c; old roosters, 11@12c; pigeons, 20@28c pair.

Dressed Poultry.—Western fowls, 12@18c; roosters, 14c; turkeys, 20@25c; squabs $2@4.85 doz.

Butter.—Western creamery, 30c; extras, 28c; firsts to seconds, 24½@26½c; special prints 34@37c; near-by prints, 31c.

Eggs.—Candled, 32@34c doz; extras, 31c. Current receipts at $8.10 per standard case.

Vegetables.—White potatoes, Pa., 75@90c bu. Onions, $2.50@2.75 per 100-lb bag. Peppers $2.00 per carrier. Eggplant $2.50@4.00 per box. Lettuce, 75c@$1.50 hamper. Beets, $1.50@1.75 bbl. Sweet potatoes, 35@50c bas. String beans, $2.00@4.00 hamper. Squash, $1.50@2.00 box. Cucumbers, Florida $4@5 basket. Celery, 60@75c doz. stalks. Cabbage, $1.50@$2 ½-bbl crate. Cauliflower, $2.25@2.75 bbl.

Fruit.—Apples, $3@5.50 bbl. Pinapples, per crate, $2.50@3.50. Pears, 50@75c bas.

Hay and Grain.—No. 3 hay, large bales, $17.50@18.00; No. 1 medium, $17@17.50; no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.00@16.50. Straw No. 1 new straight rye, $17.00; No. 2 do., $16.00; No. 1 tangled rye straw, $12.00; No. 2 do., $11.00@11.50; No. 1 wheat straw, $9.50@10.00; No. 1 oat straw, $10.00@10.50; new shelled corn No. 2 yellow, 71½@72½c. Wheat, No. 2 red, 96½@97c. No. 1 Northern, $1.01@1.02; No. 2 white oats, 45@45½c; No. 3 white, 43½@44c. Standard white, 44½@45c.

Coffee.—Rio 7s 9½c; Santos 4s 12⅛c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.10 cwt.; cubes, $4.35; powdered, $4.20; granulated, $4.10; standard granulated, $4.15; crystal A, $4.10.

Flour.—For 196 lbs. in wood, winter clear, $3.75@4.00; do. straight, $4.25@4.40; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17¾c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos. 5 to 12 and up, $1.55@2.75; do. green, 14@15c.

Provisions.—City beef, in sets, smoked and air dried, 32@32½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13½@14½c; skinned, 14@14½c; smoked, 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10¼@10¾c; do. smoked, 12@13c. Bellies in pickle, 13¼@13¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 12@12¼c tcs; do in tubs, 12⅛@12⅜c; do kettle rendered, 12@12¼c. Tallow, prime city, 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 15c ¼-pk. Peppers, 2 for 5c. Eggplants, 15@25c apiece. Cabbage, 5@10c head. Lettuce, 10c head. Beets new, 2 for 25c. Sweet potatoes, 15c ¼-pk. White potatoes, 25c ½ pk. String beans, 30c qt. Tomatoes, hothouse, 40c lb. Cucumbers, 5@15c apiece. Celery, 25c bch.

Fruit.—Pears, 4 for 25c. Grapes, 25c lb. Apples, 15@25c ¼ pk. Pineapples, 20@25c apiece.

BALTIMORE PRODUCE.

Baltimore, Md., Feb. 9, 1914.

In the Baltimore wholesale market butter, eggs and poultry were steady.

Butter.—Creamery, fancy, 28@28½c; do. choice, 26@27c; prints 29@30c; blocks 28@29c; Maryland and Penna. rolls, 20@21c. Process, 24@25c.

Eggs.—Near-by firsts, 28c; western, 28c; southern, 27c.

Live Poultry.—Hens, 17c; chickens, 17c; old roosters, 10c; ducks, 18c.

Dressed Poultry.—Turkeys, 20@24c; chickens, 18@19c; old roosters, 10@11c; ducks, 18@20c.

Vegetables.—Potatoes, Maryland and Penna. 65@75 bu; Beets, 5@8c bch. Beans, green $3@3.70 per basket. Celery, $2.00@2.25 crate. Cucumbers, $4.00@4.50 bas. Lettuce $1.00@1.50 bas. Tomatoes, $2.50@3.25 crt. Onions $1.25@1.40 bu. Eggplant $2.75@3.25 crt; Spinach $1.50@1.65 bbl. Squash $1.50@2 crt; Cauliflower, $1.50@2 bas. Cabbage, $25@28 ton.

Fruits.—Apples, $4.00@4.50 bbl. Cranberries, $11@14 bbl. Grapefruit $3.50@4.00 box.

Mill Feed.—Spring bran $27.00. Middlings flour to white, $27.00@29.00; western middlings, $26.50@27; city mills, mid., $26.50@27.00.

Grain.—Wheat, No. 2, red western, 99c; Spot, 98¼c; corn yellow shelled 71@71½c. Oats standard, white, 44@44¼c; No. 3 white 43½@43¾c. Rye, 60@70c.

Hay and Straw.—Timothy No. 1, $17.50 No. 2 timothy $16.00@16.50; do. No. 3 $14.00@15.00. No. 1 clover, $15.50 No. 2, do., $13@14.50; No. 1, tangled rye straw, $11.50@12.00; No. 1 oat straw, $9.00@9.50; No 1 wheat straw, $8.50.

NEW YORK PRODUCE

New York City, Feb 9, 1914.

The butter market showed little change. First class grade was scarce and well cleaned up at good prices. The cold weather has made the butter market unsettled and irregular. Receipts of fresh killed poultry show considerably lighter this week. Fruits and vegetables show little change.

Eggs.—State and near by hennery whites, fine to fancy, 39@40c; gathered whites, 39c; fair to good 37@38c; no grades, 33@36c fresh gathered firsts to extras, 30½@34c; seconds to thirds, 26@29c; no grades 20@23c; mixed 30@31c.

Butter.—Creamery, firsts to extras, 25½@27½c; thirds to seconds, 21@25c; state dairy, 19@27c; packing stock 15@19c; process 19½@23c.

Cheese.—Whole milk specials, 18@18½c do. common to fancy, 16@17¼c; skims 5@14¼c.

Dressed Poultry.—Turkeys, dry, 23@25c, chickens, 14@25c; fowls 12@18½c; old roosters, 13½c; ducks 10@16c.

Live Poultry.—Prices not settled.

Vegetables.—Cabbage, $22.00@25.00 ton. Green beans, $1.00@4.50 bas. Carrots $1@1.25 bag. Cucumbers, $1@1.75 doz. Lettuce 50c@$2 basket. Squash, $2.25@3 bbl. Celery, $1.50@2.00 per stan. case. Onions $2.50@2.75 100-lb bag. Tomatoes, $1.00@3.50 carrier. Peppers $1.25@1.75 per carrier. Beets, $3@4 per 100 bunches. Potatoes, $2.50@5.25 bbl. Sweet potatoes, $1.50@2.00 bbl. Eggplants, $2.50@3.50 box. Cauliflower $1.00@1.75 bas.

Fruit.—Apples, $2.00@6.00 bbl. Cranberries $9@13 bbl. Pears, $2@3.75 bbl.

Grain.—Wheat No. 2, red $1.01; No. 1, Northern, $1.03; corn, new, No. 3, yellow, new 59⅝c; oats, standard white 44½@45c.

YORK PRODUCE MARKET

York, Pa., Feb. 9, 1914.

The markets were well filled with buyers and farmers all of last week. Seasonable supplies were plentiful and prices remained unchanged except on butter and eggs. Butter is weak and several cents lower. Eggs declined from 8 to 10 cents per dozen.

Eggs.—24@34c.

Butter.—Country, 30@35c; separator, 35@38c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Hens 14@15c lb; springers 15c lb. Dressed poultry, 40@75c each.

Vegetables.—Potatoes 8@15c ½-pk; 75@80c bu; cabbage 3@10c each; lettuce, 3@6c; beets, 3@5c bch; radishes, 5c bch; onions 5c bch., 12@16c per ½-pk; lima beans, 12@14c qt; sweet potatoes, 12@15 per ½-pk.; lard 14@16c lb; celery, 5@12c; peppers, 8@12c doz; turnips, 6@10c per ½-pk, soup beans, 10@12c qt; sauer kraut, 5@8c qt; apple butter, 18@22c qt.

Fruit.—Apples, 10@30c ½-pk; pears, 10@25c per ½-pk; chestnuts, 10@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.05 bu; corn, 82c; oats, 55c; rye, 77c; bran, $1.40 cwt.; middlings, $1.50 cwt.

Wholesale Grain Market.—Wheat, 95c; corn, 70c; oats, 46c; rye, 67c.

WILMINGTON PRODUCE.

Wilmington, Del., Feb. 9, 1914.

Butter.—Print butter, 38@45c lb. Creamery roll, 35@45c.

Poultry.—Chickens, dressed, 18@25c; ducks, 18@20c.

Eggs.—38@45c doz.

Vegetables.—Potatoes 10@12c ¼-pk. Cabbage, new, 4c up. Sweet potatoes, 50c bas. Onions, 10@15c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets, 5@8c bch, Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼-pk. Pineapples, 20@25c apiece. Grapes, 10@15c lb. Oranges, California, 25@30c doz. Florida, 35@50c doz. Bananas, 10@15c doz. Pears, 10@15c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼-pk. Grape fruit, 7@10c each.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 9, 1914.

Beef Cattle.—There was a better inquiry for desirable stock and the choicest steers brought firmer values. Offerings were mainly of Virginia, Ohio and Lancaster Co., Pa., cattle in moderate but sufficient numbers. Cows and calves of the most satisfactory kinds ruled steady under a moderate demand.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,575	8,291	5,839
Previous week	2,566	7,905	5,657

Best Steers	$8.60@8.80
Choice steers	8.50@8.60
Good	8.30@8.40
Medium steers	7.87@8.10
Common steers	7.50@7.65
Bulls	5.25@6.70
Fat Cows	6.20@6.75
Medium cows	4.75@5.75
Thin cows	2.75@4.00
Milk cows	45.00@75.00

Veal calves steady.

Best calves	$11.50@12.00
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	6.50@7.00

Sheep and Lambs.—Current supplies showed a fair disposal at well maintained prices, the run of stock being rather moderate, the market closed in good shape.

Choice wethers	5.75@6.00
Good do.	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	5.00@5.50
Extra lambs	8.25@8.50
Good to choice, do.	8.00@8.25
Common to medium	5.50@8.00

Hogs.—The market closed with prices advancing. Trade was normal. Western, as to size and quality $12.50@12.75.

City Dressed Stock.—Every kind of choice and prime meat commanded full values, with inquiry seasonable. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c, country dressed calves, 11@15c; extra do., 15½c. Sheep, 9@11c. extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 9, 1914.

Cattle.—The supply on sale was 100 loads against 130 loads the week before. Market ruled slow with prices about steady on choice heavy cattle, while the light and medium grades ruled 10 to 15c per cwt. lower. The bulk of the offerings was of light and medium grades. Heifers, fat cows and bulls ruled about steady on all grades except bolognas which were higher. Best fresh cows about steady, medium grades and springers lower. Arrivals this morning numbered 75 loads. The market was active and higher on all grades.

Good to choice	$8.80@9.15
Good 1,300-1,400 lb	8.40@8.70
Medium to good 1,200-1,300 lb	8.10@8.30
Tidy 1,050-1,150 lb	8.15@8.35
Fair to medium, 900-1,100 lb	7.50@7.85
Rough, half-fat, 1,000-1,300 lb	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.00@6.50
Heifers	5.50@7.75
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves.—The supply of calves was fair and market closed 50 cents per cwt. higher under good demand. With 500 head on sale, the market was steady today.

Heavy and thin calves	$5.50@8.00
Veal calves	8.00@11.50

Sheep and Lambs.—The week's supply was liberal, and under fair demand sold steady all week. Twelve loads came in on active market today. Quotations are 25c higher.

Prime wethers	$6.10@6.35
Good mixed	5.40@5.65
Fair mixed ewes and wethers	4.25@5.00
Culls to common	3.00@3.50
Spring lambs	5.00@8.25

Hogs.—The week's supply has been fair and under good demand sold active and higher each day, closing 25 to 30c higher than Monday. Fifty double-deck loads arrived today. The market was steady to 5c higher.

Prime heavy	$9.25@
Prime medium weights	9.35@
Heavy mixed	9.25@
Best heavy Yorkers	9.35@
Light Yorkers	9.35@
Pigs	9.15@9.25
Common to good roughs	7.75@8.35
Stags	6.75@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 9, 1914.

Cattle.—Receipts for the week, 1,494 head against 2,169 last week.

Steers	$6.25@8.35
Heifers	5.50@7.25
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh Cows	35.00@80.00

Sheep and lamb receipts for the week were 2,196 head against 2,116 last week. Fair supply; market slow.

Sheep	$3.00@6.00
Lambs	5.50@8.35

Hog receipts for the week were 13,930 head against 14,411 last week.

Light Western	$9.50@9.65
Heavy to medium	9.40@9.55
Near-by	9.00@9.50
Pigs	9.00@9.30

Calves.—Receipts for the week were 308 head, against 339 head last week. Fair supply, market strong at $5.50@11.00.

NEW YORK LIVE STOCK.

New York City, Feb. 9, 1914.

Beef Cattle.—Receipts for week 2,900 head. Market firm.

Steers	$6.00@9.25
Bulls	5.50@7.75
Cows	3.75@7.00
Dressed beef	12½@14c.

Calf receipts 2,200 head. Market firm.

Choice	$9.00@13.00
Culls	6.00@8.50

Dressed Calves higher. Dressed veals, 16@19½c.

Sheep and lamb receipts 10,100 head. Market strong.

Sheep	$4.00@5.75
Culls	6.25@7.00
Spring lambs	7.25@8.25

Hog receipts 13,500 head. Market higher. Choice, $9.25@9.50; roughs, $8.15@8.50.

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 9, 1914.

Cattle.—The basis during the week was about 15c higher than the opening on strictly choice kinds. The close was active and firm on best, easy on common grades. Today's receipts were 3,500 head; prices ruled 10 to 15c higher.

Choice heavy steers	$8.75@9.15
Medium	7.50@8.70
Yearlings	8.00@8.50
Handy butchers	7.75@8.35
Good to choice fat cows	6.00@7.00
Good to choice heifers	6.00@7.50
Butcher bulls	6.00@7.50
Feeders	6.25@7.00
Stockers	5.00@6.25
Cows and springers	30.00@90.00

Calves.—Opening was 75 cents higher or $11.75@12.25; common and medium grades firmer. Supply was liberal on close, and the basis $11.75@12. Today's receipts were 1,000 head, and market ruled strong.

Choice veals	$11.50@12.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The opening was moderate with strictly choice lambs higher. On the close receipts were liberal and included a good supply of holdovers; market generally active. Good lambs active on the basis of $8@8.15. Yearlings in light supply, active demand and higher; basis, $6.50@7.25. Extreme heavy sheep light demand. Today's receipts were 15,000 head, market ruled steady.

Choice lambs	$8.25@8.40
Poorer grades	6.50@7.50
Yearlings	6.50@7.25
Wethers	6.00@6.30
Ewes	5.00@5.50
Sheep	3.50@5.75

Hogs.—Light opening receipts. Mixed hogs in good demand, good roughs firmer. Closed active and higher. Yorker basis, $9.15@9.25. Heavy hogs sold to local buyers at an advance. Today's receipts were 13,600 head, and market steady.

Heavies	$9.15@
Mixed and medium	9.15@9.20
Yorkers	9.20@9.25
Light Yorkers	9.20@9.25
Pigs	9.20@9.25
Roughs	8.15@8.40
Stags	6.25@7.25

Horses.—Offerings 600, demand quiet on advance. Today's receipts were 500 head. Choice heavy teams in fair demand at $600@650, medium grades, $100@500.—S.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., Feb. 9, 1914.

Hay.—The receipts of hay have shown quite a heavy decrease during the week and at this writing they are remarkably light, as are also billings in transit. The yards are cleaning up rapidly and while no noticeable advance is expected a stronger market is looked for. It is thought that it would be better to market a few cars now, as it is believed that there will be heavy shipments to this market later in the spring.

No. 1 timothy	$17.50@18.00
No. 2 timothy	14.00@16.00
No. 3 timothy	10.00@12.00
No. 1 light mixed	14.50@15.00
No. 1 clover mixed	13.50@14.00
No. 2 clover mixed	10.00@12.00
No. 1 clover	13.00@13.50
No. 2 clover	10.00@12.00

Straw.—Oat and wheat straw dull; a little inquiry for rye. Market quiet.

No. 1 oat	$8.75@9.00
No. 2 oat	8.00@8.25
No. 1 wheat	8.25@8.50
No. 2 wheat	7.75@8.25
No. 1 rye	9.00@9.25
No 2 rye	8.00@8.50

Ear Corn.—There is a good demand for sound No. 2 yellow ear, while receipts are but noraml.

New No. 2 yellow	69@69½c.
New No. 3 yellow	66@67c.

Shelled Corn.—Market does not seem to improve on this commodity; demand somewhat lax; supply sufficient.

New No. 2 yellow	70½@71c.
New yellow No. 3, natural	68½@69½c.
New sample	64@66c.

Oats.—While receipts are light, demand is only moderate; buyers holding off anticipating lower values.

No. 2 white	43@43½c.
Standard oats	42½@43c.
Standard No. 3 oats	41½@42c.

Mill Feed.—Very little inquiry; market dull.

No. 2 white midds.	$27.00@27.50
No. 1 brown midds	25.00@25.50
W. W. Bran, coarse,	26.00@26.50
W. W. Bran, medium	24.50@25.00

NEW YORK HAY MARKET.

New York City, Feb. 7, 1914.

Hay prices remain generally steady on all grades. There is a fair demand for the better grades. Receipts today were 1,463 tons. Timothy, No. 1, $1.05 bale; standard 97½@$1.00. No. 2, 90@95c; No. 3, 80@85c; clover 85@97½c.

Straw.—Straws remains generally quiet. Receipts 20 tons. Oats straw 50@75c bale; rye 80@85c.

NEW YORK MILK MARKET

New York City, Feb. 9, 1914.

The supply is considerably in excess of the demand, which is unusually slow for February. Those dealers who delayed installing pasteurizing apparatus in preparation for the enforcement on February 1, of the ruling of the Board of Health that, with the exception of certified and guaranteed milk, all milk sold in the city should be pasteurized, now find themselves in a predicament owing to the announcement by Dr. S. S. Goldwater, the new Commissioner of Health, that enforcement would not be postponed to suit the convenience of the delinquents. Some of the dealers had hoped to secure another postponement. Their plea was that they could not get the machinery in time. They have known for a long time that pasteurizing would ultimately be required, but have been hoping that something could and would be done which would make the expenditure of capital for machinery unnecessary. It is estimated that considerably more than 200,000 quarts of raw milk is entering the city daily contrary to the regulation. Pasteurizing will add perhaps 15 cents a can to the cost of preparing the milk for market. It is not expected, however, that this will immediately be added to the retail price. It is thought that ultimately, perhaps next fall, the retail price of bottled milk will go up to 10c. Some special brands are now selling at that rate. Farmers will probably receive $1.50 a can for their February milk.

The receipts of milk and cream in 40-quart cans for the week ending February 7, were as follows:

Railroad	Milk	Cream
Erie	42,731	1,889
Susquehanna	8,772	749
West Shore	16,010	649
Lackawanna	51,110	1,275
N. Y. Central (long haul)	77,725	1,398
N. Y. Central (short haul)	11,510	85
Ontario	42,115	2,688
Lehigh Valley	36,897	921
Homer Ramsdell Line	3,870	31
New Haven	9,364	81
Pennsylvania	2,374	311
Other sources	1,650	13
Total	304,128	10,123

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 9, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter strong at 26½c.

CHICAGO HORSE MARKET

Horses were marketed much less freely than a year ago, but the demand was correspondingly small and prices no better, inferior animals being hard to dispose of around $75@100 per head, while prime to extra drafters of heavy weight were so scarce as to be almost nominal at $300@350. Few horses went as high as $275, with desirable wagoners going at $200@250, and drivers taken sparingly around $100@150, and occasionally at a higher price. Farm geldings moved off fairly at $125@195. While farm mares were wanted at $190@225. Several pairs of farm geldings went at $300@385.—F.

TOBACCO MARKET

The first advance in prices noted this season came during the week, probably owing to the interest incident to the proposed pooling movement. Heretofore the few sales that were made were at $8 to $10 per cwt whereas at present prices are at $10 and up. Another encouraging feature is the evident high quality of crop. It is also noted that the large factories have entered the market for supplies which is always the signal for packers to begin buying. The competition thus created and the other conditions noted form together an outlook more favorable than for some time. Following are representative sales made during the week. Fifteen acres seed leaf at $10; 13 acres seed leaf at $10.25 and 1 acre Havana at $13 and $1 per cwt.

Much interest centered in the meeting of the proposed Seed Leaf Growers' Company of Lancaster, as promoted by R. L. Kinbrough, of Lexington, Ky. However, a permanent organization was not effected. The organizer claims to have the support of 172 growers the names of whom were not divulged. In contrast with this claim it is rather noteworthy that but 40 growers attended the meeting. An expression of these showed that they would ask $10 per cwt. for wrappers and $2@4 per cwt for fillers. Mr Kimbrough explained the methods pursued by Kentucky growers in past years and the method by which he proposed to unite the growers of this state. It seems that if possible, members would sell their tobacco at shed as heretofore but at a price not below that stipulated by the organization; otherwise it would be delivered to the company's warehouse and there held and handled awaiting sale. While here the owner would be protected by a warhouse receipt upon which he could borrow money from local banks. The proposed contract covers a period of seven years and provides for public tobacco markets. The following scale of prices is included $10 and $2.50 per cwt for 1913; $11@$3 for 1914; $12@$2.50 for 1915; $13@$4 for 1916; $14@$4.50 for 1917 and $15@$5 for 1918.—H. E. Tweed, February, 9, 1914.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. When reply by mail is requested, it becaues private practice and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Thoroughpin—Bruised Leg.—I have a six-year-old horse that has thoroughpin. What can I do for it? I also have a mare that was kicked on hind leg, causing soreness and lameness. On account of standing so long on one leg she is now stiff in both legs. H. L. K., Roulette, Pa.—You will obtain fairly good results by applying 1 part red iodide mercury and 8 parts cerate of cantharides to thoroughpin, 3 times a month. You had better apply 1 part iodine and 10 parts lard to enlarged joint or thickened portion of leg of your mare, 3 times a week.

Wart on Shin.—I have a 4-year-old cow that has what appears to be a large wart situated between hock and foot of hind leg. This bunch appears to be growing and getting more tender as she limps whenever it touches the ground. G. L. E., Covington, Pa.—Either apply lunar caustic once a day or burn bunch with a red-hot iron every day or two, or cut off bunch and apply equal parts powdered alum and tannic acid, twice a day.

Bitter Milk.—I would like to know what to do for a cow that gives bitter milk for a period of three or four months before calving time. The cow is five years old and apparently healthy, a fine milker and due to freshen in April. She has daily exercise in the open air and access to plenty of fresh water. G. J., Flemington, N. J.—The very best you can do is to furnish your cow with a good wholesome food, keep her in a clean, well-ventilated stable and give her 3 drams of salicylic acid and 1 oz. of powdered charcoal at a dose in each feed, and salt her well. Look well to the utensils in which the milk is handled. Scald and store them in bright sunlight.

Warbles.—Nearly every year my cattle have been troubled more or less with grubs in their back. One of my neighbors recommends washing their backs with strong brine, but before doing so, I would like to have your opinion. B. T. H., Sharon City, Pa.—Many people apply strong salt and water to the backs of cattle in the fall to prevent or kill the larvae or ox warble grub. Warbles come from eggs deposited about the heels and breast and fore-legs of cattle in summer. These eggs are swallowed and seem to penetrate the walls of the gullet and work thru the tissues and lodge under the skin along the back of the animal. I have never thought it good practice to kill the grubs and allow them to decompose in the back of the cattle, but rather prefer to make the opening in the skin large enough so that the grub can be squeezed out, then killed, which of course will prevent any future multiplication of this pest. After squeezing out the grubs, I usually apply an antiseptic lotion such as 1 part bichloride mercury and 500 parts water, or 3 percent solution of carbolic acid or a good home-made healing remedy. It is always good practice to destroy the larvae or eggs that are deposited by the ox warble fly.

Leg Weakness in Poultry.—Several of my hens appear to be affected with leg weakness. Some of them are hardly aule to walk. L. T. S., Sandy Lake, Pa.—Leg weakness is not a disease, but the result of other ailments which cause more or less debility. Are you sure that your fowls are not lousy and have you applied kerosene to roosts to kill mites? Have you recently cleaned and whitewashed your roost? Their roosting place may be damp and with no sunlight. Increase their food supply, add a little ginger, cayenne pepper and salt to each feed.

Mange.—My hogs appear to have an itchy condition of skin and nearly all of them are inclined to rub. K. S. O., Espyville, Pa.—Mix 1 part sulphur, ½ part carbonate potash and 3 parts fresh lard. Then apply to itchy parts of body, 2 or 3 times a week. Give them 10 drops Fowler's solution at a dose in feed, 2 or 3 times a day.

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Feeding Cattle on Eastern Farms.

By Prof. W. H. TOMHAVE,
Pennsylvania State College.

The feeding of beef cattle on the farms in the Eastern part of the United States has never been as extensively conducted as in the "corn belt." This is in part due to the system of farming and the lack of proper facilities and feeds to compete with the large feeding centers of the middle west. There are sections in the East, however, where it has for many years been a part of the business of farming. Instead of selling from the farms the corn and hay produced, they were fed to cattle with the result that the fertility of the soil was increased from year to year. While at times it seemed that such a practice meant a financial loss to the feeders, they were able to produce better crops, resulting in indirect returns which more than paid for the crops fed on the farm.

As an illustration of this type of farming may be cited Lancaster County, Pennsylvania, where the farmers have been feeding annually from 40,000 to 60,000 head of cattle. This county is known as the richest agricultural county in the United States and much of this distinction is due to the persistency with which these farmers have fed cattle from year to year in order to maintain the fertility of the corn and tobacco fields. Such a system of farming has made it possible to build fine homes and farm buildings and perfect a rich agricultural section.

If such a system of farming had been conducted in many other parts of the East there would today be very few deserted farms. It is obvious that deserted farms are primarily due to the depleted condition of the soil, caused by continuous cropping and selling all crops produced. With every ton of grain sold, there is a loss to the farm of from $4 to $6 worth of soil fertility, which is about 25 percent of the price received for the grain or hay. If the same grain had been fed to cattle it would have taken only about $1 to $6 worth of fertility for every ton of live animals sold. The live stock converts the grain crop into more concentrated form, with the increased valuation of the livestock; only about 5 percent would leave the farm from the fertility standpoint with stock feeding.

The feeding of beef cattle is not a "Get rich quick" system of farming. It is a system that cannot be successfully conducted unless it is consistently a part of the farm business. The farmer who has cattle in the feed lot the good years as well as the poor years is the one who can depend on a profit for a series of years. The East is particularly well adapted to the feeding of beef cattle because of the large amount of roughage produced. When this is fed to good cattle a market is provided for this roughage that cannot otherwise be obtained. The cattle will not have the degree of finish that is obtained by long grain feeding, yet the cheapness of gains made offsets the difference in price received when the cattle are sold. In many sections the farms are located some distance from the railroads, which makes it expensive hauling bulky crops to market. If these same crops were fed to beef cattle, the cattle, when ready for market, could be driven to the railroads and thus reduce the cost of transportation.

A LOT OF FEEDING STEERS WHEN FIRST PUT ON FEED.

THE SAME LOT OF STEERS WHEN FINISHED AND READY FOR MARKET.

The profits received from cattle feeding are largely determined by the type of cattle selected for the feed lot. Cattle of beef breeding are to be preferred. Steers of dairy or scrub breeding cannot be relied upon to make substantial gains in the feed lot, nor will they bring the price upon the market when sold. The scrubs are just as costly as feeders as they are in the dairy. An off-type steer is a poor feeder and a poor seller. The only time a person is warranted in putting cattle of such type in the feed lot is when they can be purchased on an exceptionally wide margin. Even under such conditions there is little satisfaction in working with cattle that do not make good use of the feed consumed. The margin between the price paid for cattle when put in the feed lot and the selling price will depend upon the value of the cattle and the price of feeds. It will generally range from 65 cents to $1.25 per hundred pounds.

The cost or value of the feed consumed is an important item in cattle feeding. The cheapest combination that can be fed must be considered, even tho the daily gains are not so large as from a more expensive combination. The combination from which the cheapest pound of gain can be produced is generally the one to feed. The method of feeding cattle in many regions of Pennsylvania and the East is the same as it was twenty years ago, not keeping pace with other lines. In most cases it is an expensive method, due to the combination used. A common Pennsylvania steer feeding ration is made up of corn, bran, hay and corn stover. This combination is usually fed as soon as the cattle are put in the feed lot and they are early put on a full grain ration.

This grain mixture is made up of about four parts of bran to eight to ten parts of ear corn, by weight. The bran is fed as a source of protein, which becomes very expensive at its present price of $25 per ton. It contains only about 12 pounds of protein for each 100 pounds, while cottonseed meal contains 37 pounds per hundred, or three times as much and only costs $10 more per ton. Not only can a saving be made by substituting two pounds of cottonseed meal for 4 or 5 pounds of bran, but also by feeding more roughage during the first two months of the feeding period and saving the grain for the latter part. On a recent visit to some cattle feeders, I found that the daily cost of feed per steer was about 26 cents per day per head just after the cattle were on full feed. This cost could be materially reduced by feeding cottonseed meal in place of bran and feeding only a small amount of corn and more hay and stover.

The cheapest and most satisfactory method of

(Continued on page fifteen.)

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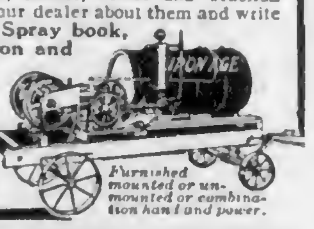

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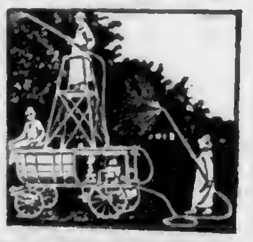

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Care and Treatment of Seed Potatoes

Identifying Irish Cobblers.

By E. A. ROGERS, Cumberland Co., Me.

In my first article I tried to bring out some of the causes of getting a poor stand of plants even when good seed had been used. There is a great deal of complaint of mixed seed, especially Irish Cobblers, and the loss from mixed seed alone runs into hundreds of thousands of dollars.

Where a late variety, like the Green Mountain, is mixed with an early one like the Cobbler, the loss is almost in direct proportion to the percentage of Green Mountains that are mixed in. This is especially true where the Cobblers are to be dug as early as they will make a crop. On the other hand, if digging is delayed for the Green Mountains to mature, the Cobblers will ripen off and the crab grass will take possession and the cost of digging is greatly increased.

There is but little excuse for the Northern seed grower to raise mixed Irish Cobblers, and there is but little more for the Southern grower to plant them mixed after he has received them. I know of no potato so easily made true to name as is the Irish Cobbler. It is a harder proposition for the grower in the South to true them up than it is for the grower in the North, for the reason that the southern grower plants very early, before heavy frosts cease. Yet I am satisfied that it will pay anyone who is making potato-growing a considerable part of his season's crops to have a proper building to prepare his seed potatoes in.

Take Irish Cobbler potatoes and spread them out, one deep, in the direct rays of the sun, and in four or five days they will turn almost purple in color. A Green Mountain or most all white sprouts which includes the Early Eureka, will turn green; a very light green at first, and will be in this light green stage when the Cobbler shows purple. Following this practice, one can pick out his Cobblers nearly as easily as tho they were apples.

As the southern grower plants very early he claims he has no time for this, which I know to be the case. Hence the need of a building as mentioned above. This building should be made with plenty of window space, as it is the sun's rays that turn the Irish Cobbler purple. If they are allowed to green up slowly in a light place, without the direct rays of the sun, the difference in color will not be marked, and separation will be more difficult, if not impossible. Such a building should be fitted for heating and the temperature kept around 60 degrees, and the potatoes kept here a week or ten days before cutting and planting. If one is cramped for room, the potatoes can be spread six inches or even a foot deep on the floor if they are shoveled over as often as every two or three days; this, of course, after the Cobblers have been separated from any other variety that may be mixed with them.

I am firmly convinced that such a building will pay for itself many times over in a very few years. In fact, I believe that the increase in the crop of a single year will more than pay all the cost of such a building which can be used for other purposes ten months in the year. A gain of ten days in maturity is one of the advantages in having such a building. Potatoes will make a greater gain by being in the warmth and light for ten days previous to planting than they possibly can make by being in the soil. If one will take two barrels of seed tubers which are hard and eyes started but little, and plant one on April first and spread the other in a building such as I have described for ten days, and then plant, the last planted will mature first and in most cases will give a greater yield.

So far I have not spoken of disease. There is much of this in a great deal of so-called seed stock, and there is but little need of it in the case of most of the diseases we now have to contend with. No grower should plant diseased stock, for the diseased portion will never make him any money. It might far better be thrown away in the beginning than to be planted and left to contaminate that which was free. The writer has had black-leg, fusarium, early and late blight, and knows from actual experience what it means. This was before he learned how to get rid of those diseases. In our crop of 1913, if we have a trace of either, I have been unable to find it up to present writing, and we are using from a bushel to a bushel and a half of potatoes every week in my family. It required but little work and was not costly to accomplish this.

Living so far north, I do not need a greening-up house, as I can spread my seed tubers outdoors before they have started to sprout with no danger of freezing. Outdoors is really the only fit place to put potatoes intended for seed after they have once begun to sprout in the cellar. Where possible, north or south, when potatoes intended for planting begin to sprout they should be gotten out and first soaked for two hours in a solution of formaldehyde, one pint of the 40 percent solution to 30 gallons of water. I believe this to be much more effective than the gas treatment. This soaking will kill all disease germs that there may be on the outside of the tubers and also any sprouts that may have started. Now if the potatoes are spread out in the light and sun for ten days or until the eyes begin to get lively again, each eye has the same chance and the plants will come up much more even. If these potatoes are spread out on a turf where but little grass grows and are kept raked over so that the eyes on the under side cannot root into the ground, they will keep in fine condition for planting until wanted; in our section they will keep until killed by October's frosts.

Could the writer have the cutting of the seed done just to suit him, he would not have any of it cut over 48 or less than 24 hours ahead of the planter. This of course is impossible at times. Each man cutting should have two knives, ground very thin. I have never yet been able to buy a knife thin enough for this purpose without grinding. A pint glass preserving jar filled with strong solution of the formaldehyde should be handy to each one cutting, and when any potato is cut into that shows any discoloration whatever, which may be an evidence of three or four diseases, it should be thrown away and the knife placed in the jar of formaldehyde and the other knife used to cut the next tubers. In this manner nearly all diseases will be eliminated. This has proved to be the case with the writer, and while at the beginning as high as 25 percent of the seed tubers were thrown away, the present indications are that the loss from this source will not be over a fraction of one percent the coming season.

Land plaster or sulphur should be dusted upon the tubers when cutting, shaking them up until all the cut surfaces are covered. I prefer the sulphur as it seems to keep wire-worms and grubs away from the seed better than gypsum, but is more disagreeable to one's eyes when planting, especially on a windy day. The potato grower who will follow out these directions, whether he lives north or south, using at all times his own common sense and judgment will find that a poor stand of plants or a poor crop will become a rare occurrence with him. With a quarantine against all foreign potatoes, it is now up to the American grower to produce enough for the country's needs, and he has a right to do this at a profit provided he uses those methods which will insure him a paying crop.

A NEW GET-RICH-QUICK SCHEME EXPLAINED

A Seed Swindle

During the last few weeks the Seed Laboratory of the New Jersey Agricultural Experiment Stations has been uncovering one of the most flagrant cases of seed adulteration and misrepresentation, so far reported. The details of the scheme are given to the public that those who have occasion to buy seed may be warned and that those who have bought some of the seed herein described may be informed of the quality if they have not already carefully examined their purchase.

The first intimation of this new bunco game came from Warren County about the middle of December, 1913, in the form of a sample of seed which analyzed about 20 percent of red clover seed and 80 percent German millet seed. This sample represented a lot of seed sold by a Mr. O. J. Rice, who claimed to be a representative of the Rice Seed Co., dealing in tested seeds and having seed arms in Cambridge, New York. This statement and the argument that the price of best grade clover seed such as e offered would be greatly increased by pring, made it possible to sell a con- derable amount of seed.

Investigation showed that after the ders were secured, Mr. Rice sent an der to one of the well-known seed rms in New York City for so many bu- els of clover seed and so many of erman millet. When these were re- ived the two kinds were mixed and e individual orders made up from the ixture. To supply the orders taken a certain section of Warren county, r. Rice ordered 27 bushels of German illet and one and a half bushels of red over seed. The gross profit on bushel of this mixture in which e proportions of each were deter- ned by actual analysis was about 4.71. It is interesting to note in is connection that if Mr. Rice had un- ertaken to sell good clover seed at the te of $9 per bushel, he would be los- g $2.40 on every bushel sold, since bushel of 60 lbs. at 19 cents per pound st him $11.40 at New York.

Since the first reports of sales of this rt were received, other similar samples nd reports have been received from Middlesex, Sussex, Ocean and Bergen unties. Some variations have also een reported, the principal one being e introduction of Australian clover, hich gives two or three cuttings a sea- n. Several were induced to try this the considerate price of 30 cents a und. When this seed was examined y the seed analyst, it was found to be ne other than crimson clover seed hich should not cost above 10 cents a und. In looking over the analyses ade of samples received at the seed boratory prior to November first, 1913, instance was reported where a party d purchased parsley seed at 80 cents pound from Mr. Rice and had received rimson clover seed. At the time this curred, it was thought that there must ave been an error in shipping and no re attention was given to the matter. Present developments lead one to think hat the error was committed in buy- g from Mr. Rice. He is now in the ands of the law. In default of bail e is awaiting the action of the Grand ury of Middlesex County.

There are several valuable lessons in is case. First, it is not good business buy seed, fruit trees or gold bricks from agents who have no standing in e community or who cannot furnish tisfactory references to your bank or other responsible parties. The banks re responsible to a certain extent for he protection of your account from cer- ain of our population. It is safer to uy from local merchants or other es- ablished and reliable firms from whom ou can obtain satisfaction in case of ecessity without hiring a detective to cate them. Secondly, in the case of his particular commodity, it should be ealized that the profits from the sale f a few bushels of good seed are so mall that an agent could not pay ex- enses unless he charged exorbitant ates. Otherwise he must resort to adul- eration of some form to unduly increase he profits. Then too, the farmer should ake it a point to know what his crop eeds look like or else submit samples o the Seed Laboratory before purchase nd also after purchase to check the rst sample.

The Seed Laboratory does not attempt say what shall be sold in the State, or can it issue injunctions against armers restraining them from buying nferior goods from unreliable sources. ut if the farmer will make the best of is opportunities and use the Seed La- oratory as indicated, it will then be lmost impossible for agents or others ngaged in selling seeds to take unfair dvantage of his lack of thoro know- edge of all farm seeds.—John P. Hel- ar, Seed Analyst, New Jersey Experi- ent Station.

FARM EXPERTS AND EXPERT FARMERS

With the passage of the bill for agri- ultural extension work by both houses f Congress we have presented to us fresh the question of more farm ex- erts, more people at fancy pay to tell us how we are to do things; more peo- le to add to that already large army ho are intent on getting the American farmer to make two blades of grass grow where one grew before without any regard as to whether the growth of that extra blade will be profitable or who is to get the benefit of it after it is grown.

It must be remembered as a basic roposition in connection with this whole subject that there is no moral or legal obligation resting upon the farmer to feed any one but his own family. It seems to have been taken for granted that as a class the farmers were expected to in some way produce enough to feed the rest of mankind. No such obligation exists. But even if they did carry this responsibility, it can be shown from the government's own figures that if you compare the last ten years with an equal period 40 years ago, you will find that the farmer is producing more food in proportion to the population than he did then.

To compare the last two or three years with a like period farther back is an unjust comparison because of the wide variation both in climatic conditions and in amount of equipment. Cows are scarce now, why? Because no longer ago than in 1904 and 1905 dairymen, as here in Lancaster County, Pa., had to take, during certain months in the year, 20 and 21 cents a pound for butter fat. We could not begin to produce it for that, and as that same relative price held everywhere gradually cows were discarded and calves were slaughtered that should have been raised for breeders. At that time we heard no howl from anywhere about the low cost of living. The condition was allowed to go on until the destruction of the herds and the shifting to milk production equalized matters and the farmer has adjusted his dairying to a profitable basis. That's good business isn't it?

It can also be shown from the census reports that the American farmer has not impoverished his land, the statement of many of these uplifters to the contrary notwithstanding. The following table is taken from the census reports:

	Yield per acre in bushels. 1890-1900	Yield per acre in bushels. 1900-1910
Corn	24.56	25.79
Wheat	13.27	14.28
Oats	27.19	29.69
Rye	14.31	16.13
Barley	23.26	25.89
Buckwheat	16.87	19.06

There are no ten-year figures for potatoes, but by comparing the census of 1899 with 1909 we find that while the acreage has increased 24.8 percent, the bushels per acre have increased 42.4 percent.

The report of the House Committee to the House makes this statement: "To teach the farmers the best methods of increasing production is exceedingly important, but not more vitally so than is the importance of teaching him the best and most economical methods of distribution." Here is a great fallacy that our congressmen will not seem to recognize. With the exception of the truck farmer and the small fruit farmer, the American farmer is essentially a wholesaler. Even Mr. Lewis made this mistake in his Parcel Post argument, exhaustive as it was. The average farmer will not bother his head about distribution. That is a city problem and must be worked out by the cities. Some of these rural uplift organizations in our cities might well occupy themselves with this problem.

The dairy business was once almost entirely an individual and retail business, but now largely wholesale. The raising of cereals was once a community business between producer and consumer; now it is almost entirely a wholesale business, as far as the farmer is concerned. It is so with hay, potatoes, cattle, hogs, poultry, eggs, and largely with fruits. And while he is interested in abolishing unnecessary middlemen, all the experts in Christendom can not make a retailer of him.

If what has been brought out is true, then what kind of teachers do we need? We need expert farmers. We need men who in each community work out the methods suited to that particular locality. Those are the real teachers who have been leading the advance in farming. Neighbors copy from these men in every community. Instead of this we are offered farm experts, young men fresh from college with no experience; well versed in theory, but not knowing the essential variations between theory and practice. If this agricultural extension work is to amount to anything, in these older farming communities at least, it must be handled by men who have worked on farms for at least five years, not as managers of millionaire-fad farms, but where they are compelled to make good. If a man can show that he is an expert farmer, his fellows will readily take his advice; but if there is a suspicion that the person offering advice is not a practical expert farmer, they will take his counsel no more than would a manufacturer put a foreman over his men who did not understand the business in hand.—John A. McSparran, Lancaster Co., Pa.

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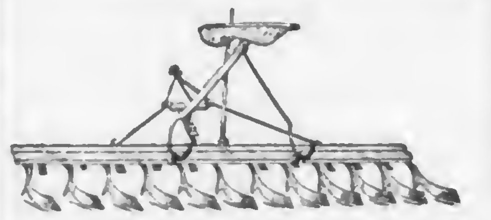

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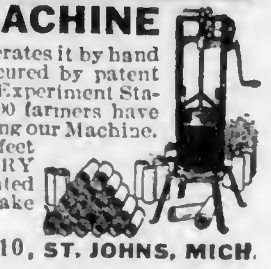

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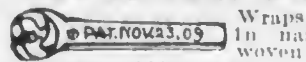

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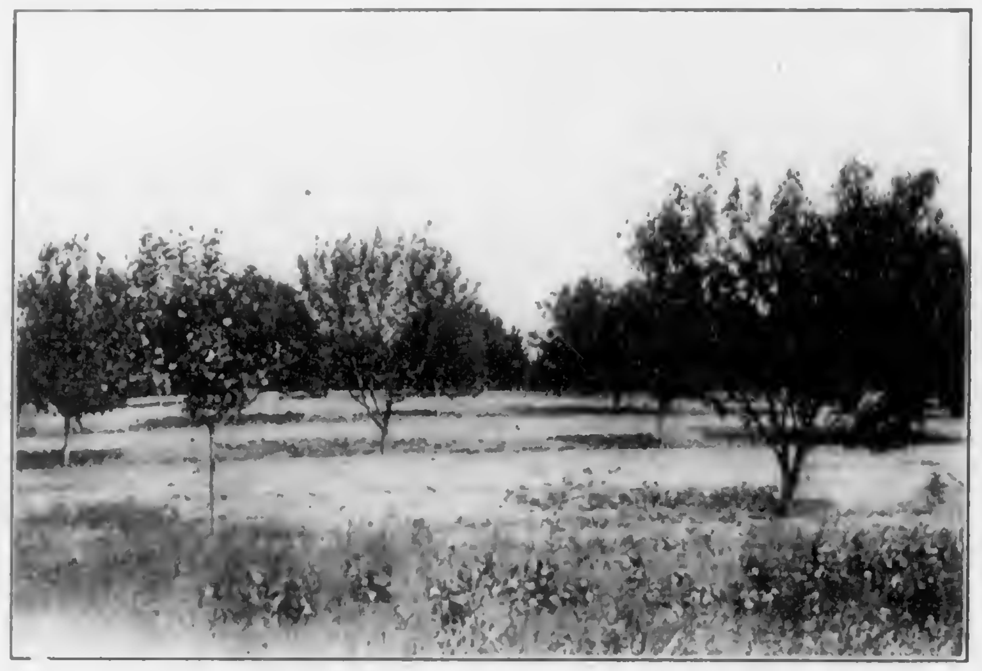
Horticulture

RUNNING A FRUIT FARM

Prof. F. C. Sears, Professor of Pomology, State College of Agriculture, Amherst, Mass., speaking at the New York State Fruit Growers' Convention on his six years' experience in running Bay Road Fruit Farm, at Amherst, Mass., "which" as he explains, "is an orchard started in 1908 by Prof. Waugh and myself and which now comprises about 125 acres" gives some interesting information.

Choice of Varieties

There is a better distribution of the labor required where one plants several varieties of any fruit and several different kinds of fruit. If he enlarges his list of varieties, and still more if he includes several classes of fruits in his plantings, his season of labor is very decidedly extended. In the matter of picking, for example, instead of having it all come in two weeks, the last of September and the first of October, his picking season extends from July to the middle of October, a very decided advantage. Another point which has influenced us in increasing our list of varieties somewhat and in planting other than the apple, is that it enables one to hold his customers better. For the grower who is catering to a personal market the ability to offer a choice of varieties is certainly worth considering.



A PEACH AND APPLE ORCHARD INTERCROPPED WITH ASPARAGUS. SET WHEN THE TREES WERE PLANTED. ORCHARD IS HEALTHY AND VIGOROUS.

Looking at the subject in this way, while we have made apples our leading fruit, we have also set peaches, plums and quinces, and we expect to add grapes and cherries. Our list of important varieties in apples is, in the order of ripening: Yellow Transparent, Red Astrachan, Oldenburg, Wealthy, McIntosh, Hubbardston, Sutton, Palmer Greening, Wagener, Rhode Island Greening, Baldwin. Of course, we have set many more of some of these than of others. Probably five-sixths of the plantings are made up of Baldwins, McIntosh, Wagener, Rhode Island Greening and Palmer Greening.

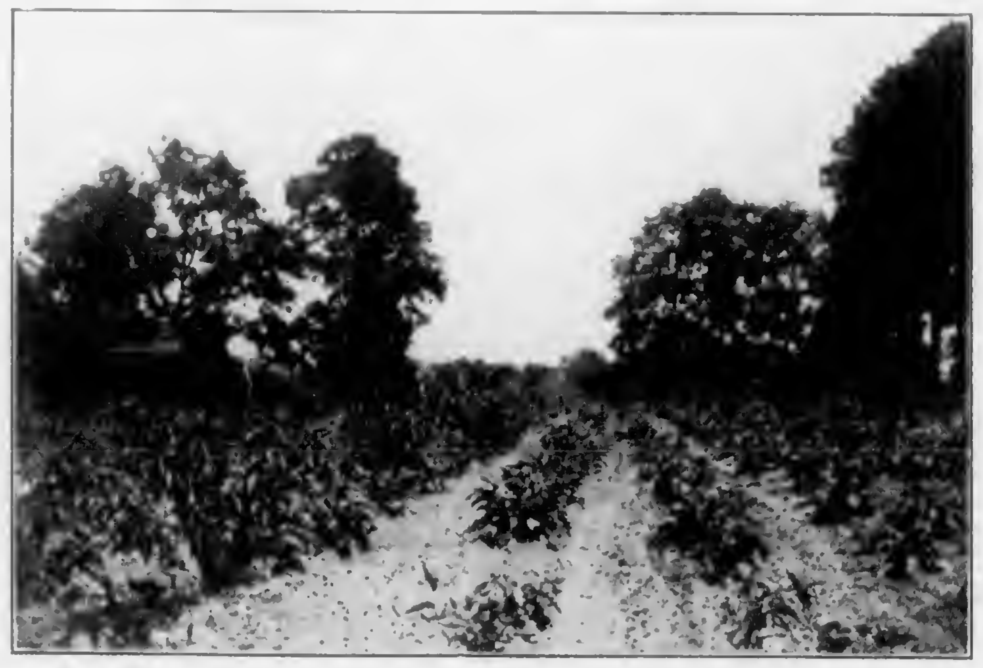
In peaches we have set Greensboro, Carman, Champion, Belle of Georgia, and Elberta. This gives a good succession altho not a perfect one. There are breaks in the line which we want to fill and in particular we need a variety that is later than Elberta.

Inter-crops for the Young Orchard

To be satisfactory a crop must first of all leave the trees in as good or better condition than they would have been without it, and second, it must be profitable to the owner. This is a difficult crop to get. At least we have found it so. To be satisfactory to the orchard the crop must require good cultivation, must not spread out so as to shade the trees or rob them of food, and it is very desirable that it should make its greatest growth at a different period from the trees. In order to be profitable to the owner it must be a crop which he can use to advantage on the farm or which he can sell for cash. We have not considered it advisable to go into truck crops and we are therefore restricted to general crops that can be sold for cash. Those which we found most satisfactory under our conditions are: Soy beans, corn, potatoes, cabbage, squash, and strawberries. Even strawberries we find objectionable in anything but very young orchards because they prevent cross-cultivation, and still further because they require to be kept on the land two years. It is impossible to keep the trees in as good condition where the land cannot be given thoro preparation in the spring.

Cover Crops In The Orchard

The most important offices of a cover crop are the following, arranged roughly in order of their importance: 1st, to add humus to the soil; 2nd, to prevent washing of the soil; 3rd, to check the growth of the trees; 4th, to add nitrogen to the soil. In addition to this, if the crop is to be used on an orchard of any size, and if the owner is not a millionaire, the seed must be reasonably cheap. At the present time the following are our most promising crops: Buckwheat, barley, dwarf Essex rape, turnips, soy beans, and rye. One great advantage of buckwheat is that it will grow almost anywhere and that it leaves the soil in fine condition; also that it tends to re-seed itself from year to year so that one saves on the bill for seed. One practice we have found helpful in getting a good growth of cover crops is to apply a little fertilizer when the cover crop is sown. In fact, we are even contemplating changing the time for applying our orchard fertilizers from early spring to the date at which the crop is sown, for, of course, in the long run, the trees get the plant food which is taken up temporarily by the cover-crop.



EGGPLANTS INTERCROPPED IN FIRST YEAR PEACH ORCHARD.

A point in favor of turnips and dwarf Essex rape is the low cost of seed. Two pounds will sow an acre and the former costs about 35 cents a pound while the latter can be bought for about 8 cents. Where one is sowing a large acreage this low cost of seed looks very attractive. A further advantage of turnips is, that under anything like favorable circumstances a good many of them will grow large enough to be marketable. One can then go thru the patch and pull out enough to more than pay for the cost of the crop and still have a good stand to act as a cover.

Orchard Implements

While we have a great many different implements, the three which we use the most are the light-draft orchard harrow, the California orchard plow and the orchard cultivator. The first mentioned is a light form of spring-tooth harrow, mounted on wheels, and will come nearer to doing all the work in the orchard in one day than anything else I have ever seen. Our teams have done as much as ten acres in a half day.

The California orchard plow consists of a gang of four disks at the end of a long beam and its strong point is that one can get close up to the trees with the plow and still keep the team well away. We have found it better than any plow we have yet tried. The orchard cultivator is an implement with rigid teeth and is especially useful where there is hard work to be performed; that is, where the soil is heavy or the weeds bad. Under such conditions the light-draft harrow will not work satisfactorily.

Spraying

We start in the spring with pruning and dormant spraying and this is followed by spraying our apples for codling moth. If we grew all peaches we should leave out this latter work. Then later on we spray our peaches with self-boiled lime-sulphur which comes at a time when there is little to do in the apple orchard. Then all of our low lands are seeded down to hay, a crop that lends itself admirably to the equitable distribution of labor because haying comes in just as we are thru spraying and is out of the way just in time to begin picking the earliest peaches.

Marketing

We have worked principally to develop a family trade in fruits and personally I believe that is by far the most valuable type. I had rather sell a man 5 barrels at $4.00 per barrel than two boxes at $2.50. On the other hand we must not over-look the fact that the less fruit one sells a customer at one time the more that customer is willing to pay. At two apples for five cents (a very reasonable price where one is buying a few apples to eat) a barrel of apples (estimated at 350 apples) will sell for $8.75. In particular I believe that if growers could persuade their grocery-men to handle the fruit on a commission, some form of small basket or carton would be very profitable. This plan not only gives the advantage of better prices to the grower, but it gives him a certain control over the price which is very desirable.—W. H. Jenkins, Delaware Co., N. Y.

INTERCROPPING ORCHARDS WITH TRUCK CROPS

Intercropping the young orchard of apple, peach or pear is really necessary where farmers own their land at high cost, and, in fact, intercropping with crops that are not exhaustive guarantees a certain amount of fertilizing and cultivation which a hard-pressed farmer might neglect in connection with land devoted to an orchard alone, which is necessarily slower of return.

In a young orchard the area between trees is not affected by young roots and a crop grown between them cannot rob the trees for the first two or three years, if not grown too close. Indeed, intercrops do not take all the fertilizer the farmer puts on them and some of this will benefit the trees as they grow. It is never wise, however, to use a succession of intercrops on an orchard in one season working the ground from early until late, as a market gardener would do. One large grower of apples and peaches who intercrops his young orchards lays down this rule: Never intercrop a bearing orchard with any crops that

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comprise special distinct compositions of plant food elements for forage crops, root crops and cereals to meet just your individual soil and crop requirements. They supply just the constituents your particular soil may need for some special crop. You pay for no unnecessary plant food elements.

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is prepared especially for the market garden trade for vegetables, small fruits, greenhouse and garden crops. It supplies the four plant food elements needed for these crops in soluble form, mixed in such proportions as to meet your particular soil and crop requirements. Although soluble, it is so prepared in granular form as to prevent leaching and wasting. It produces quick growth and early maturity, which means *bigger profits.*

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For Florists and Gardeners for Greenhouse Work

These fertilizers are prepared by men who have made a life study of greenhouse fertilization in such a manner as to furnish just the plant food elements which your compost lacks. For this reason you save the cost of such plant food elements as your particular soil or crop may not require.

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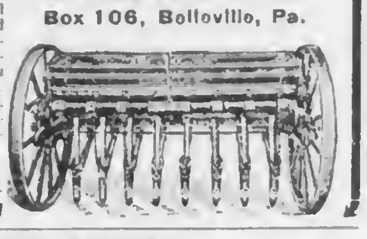

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Two Years Old. Fine, Clean Stock.

Height	Branches	Per 100	Per 1000
18 to 24 in.	3 to 5	$2.50	$16.50
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500 at 1000 rates.
Orders for $10.00 or over delivered free.
We grow our own stock and employ no agents. Write for free price list on Trees, Shrubbery, Evergreens, etc.

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Then turn your walking plow into a sulky with a WINNER PLOW TRUCK and let him plow while you do work too heavy for him. You get 10 Days in which to see whether it's worth the money. If you think it isn't, we return your money and pay all the freight. To buyers in new territory we make a Special Introductory Offer. Write today for this offer and our Free Book. Make your boy a full man.

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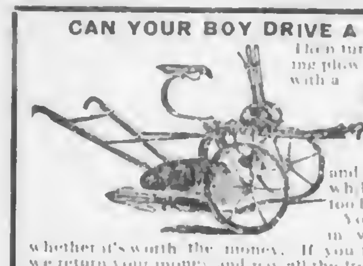

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Orchard size, Elberta and etc. Nursery Catalogue and Seed Catalogue both free. Allen & Sons, Geneva, Ohio

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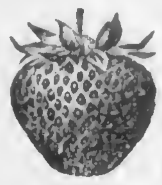

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STRAWBERRY PLANTS
1000 for $1.00. Quality guaranteed the equal of any plants. All kinds and everbearers listed. Also trees. Raspberries, blackberries, shrubs, asparagus, tomato and cabbage plants. Catalog free.
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STRAWBERRY PLANTS, over Twenty Varieties at $2.50 per 1000. Descriptive catalog free. Basil Perry, Georgetown, Delaware. Headquarters for Fall Bearing Strawberry Plants.

demand cultivation later than August 1st, as later cultivation tends to make the trees grow new wood instead of perfecting the fruit buds for next year's crop. Peas, beans, watermelons, cantaloupes and early tomatoes are safe crops to employ for this purpose. Young orchards not yet bearing may be hurt by late stimulation of young growth which cannot harden before winter and therefore winter kills.

When the trees get large intercropping may have little advantage, for either it will rob the trees of moisture, especially in bearing years, or the trees will rob the crop.—M. Robert Conover, Monmouth County, N. J.

PREPARING FOR TRUCK CROPS

Mr. H. F. Thompson, a successful truck farmer of Massachusetts says that the aim of the trucker is to grow good crops and to grow them quickly and that herein lies his profit. He urges the use of more lime, or rather a return to the use of lime, to sweeten acid soils. He does not approve the use of burnt lime, but of ground limestone or of ground oyster shells, believing it impossible to raise alfalfa, clover or crimson clover on acid soil otherwise.

To get needed nitrogen and organic matter in the soil to hold the moisture, plowing under cover crops and using stable manure is advocated. Crimson clover as a cover crop is to be preferred, planting in the early fall and turning under in the spring; if this is winter killed, vetch is the next best and rye the last resort. Crimson clover takes from the air 100 pounds of nitrogen to the acre and fixes it in the soil; the market value of nitrogen in commercial fertilizers is 20 cents a pound.

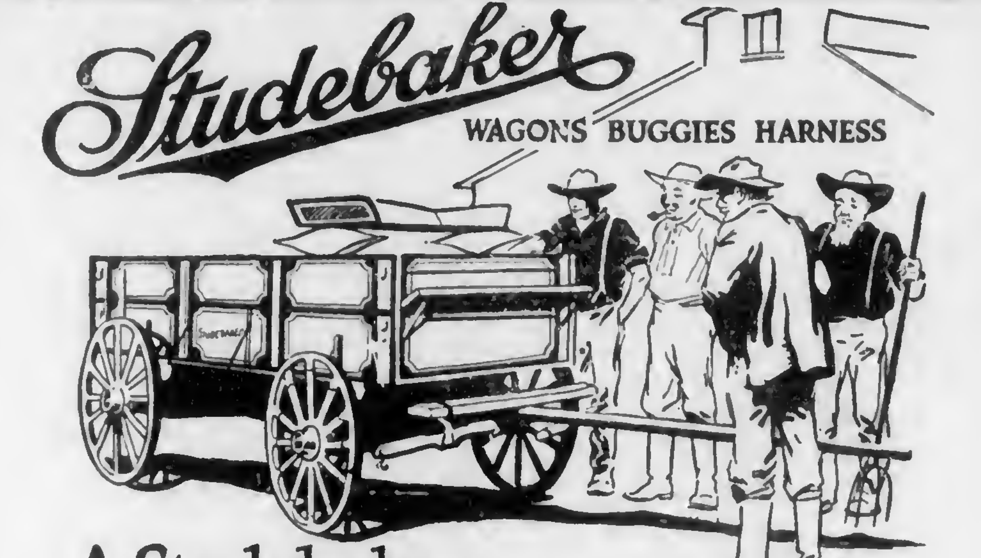
Stable manure, declares Mr. Thompson, is the best of fertilizers and is worth about $2.75 a ton, containing at the price paid for plant food in the commercial fertilizer, $2.75 worth of nitrogen, phosphate and potash; but it is ahead of the commercial fertilizer in that it furnishes humus for the soil holds the moisture, and decomposes more rapidly, having with it the bacteria needed to furnish plant food for the plant roots. A farmer can afford to sell anything else on his farm, but he cannot afford to sell an ounce of stable manure according to this grower, and he can, on the other hand, afford to buy it. He should keep his manure carefully, and not throw it out in a heap, and allow it to heat or leach out.

Mr. Thompson shows that commercial fertilizer has its base in Chilean nitrates, Florida or Carolina phosphate rocks, and German kainit or sodas. Others are made from ground bone, dried fish, dried blood, and ground hoofs, horns and leather. He recommends all except the last. Mr. Thompson states that one farmers' exchange in New Jersey bought $140,000 worth of commercial fertilizer in one year.—D. T. Hendrickson, Monmouth County, N. J.

CONTROL OF A FEW INSECT DISEASES

Dr. T. J. Headlee, State Entomologist of New Jersey, believes that farmers can guard against white grubs, wire worms and cut worms, which attack the potato tuber, by a proper rotation of crops. These pests tend to collect in grass lands. The flea beetle is one of the most injurious enemies of the potato plant. In the worst cases, to get rid of the pest, he advises putting Bordeaux mixture on in such a way that it will reach the lower as well as the upper part of the leaf.

Among the insects which affect the peach are the plum curculio and peach tree borer. The first may be taken care of in the course of the regular spraying schedule, beginning to spray at the time the petals drop and keeping the peach fruit covered with a poison for a month or six weeks after the petals drop. The peach tree borer worms into the trees. In California they have successfully used a coating of asphaltum applied warm with a brush to the trees as a protection against this disease. This is put on in the spring. Apple trees attacked by codling moth and plum curculio. Fifty percent of the apples knocked down before ripening are due to the latter. Dr. Headlee recommends a regular spraying schedule, the first at the cluster cup stage, the second when the blossoms fall, the third ten days after the blossoms fall, giving fruit and foliage a careful coating; the fourth three weeks after the blossoms drop, and the fifth and last spraying for late fall and winter varieties, ten weeks after the blossoms fall.—D. T.



Studebaker
WAGONS BUGGIES HARNESS

A Studebaker that served 4 masters in 49 years and still on the job

NEARLY half a century of usefulness is the life history of a Studebaker farm wagon, at present owned by Levi Dallas of Topeka, Ind. A letter received by Studebaker states:

"I bought a Studebaker wagon in July, 1864 from Mr. Walsh, your dealer at that time at Goshen, Ind. I had the wagon eight or ten years, then sold it to a neighbor, John S. Yoder. The wagon was then sold to Thomas Cullet. When Mr. Cullet died the wagon was sold to Levi Dallas who lives two miles east of Topeka, who now owns the wagon and who is using it right along."

THIS IS CONCLUSIVE PROOF

It is economy to buy a Studebaker Wagon. Suppose the wagon now owned by Mr. Dallas which was purchased in 1864—cost at that time $110.00—divide the amount into 49 years—the wagon has cost $2.24 per year—and every year it continues to give service it reduces the cost per year.

If some other make of wagon had been purchased at a cost of $90.00 and that wagon had lasted the usual life of such a wagon—ten years—or to be liberal let us say 20 years—divide the cost into 20 years—that wagon would have cost $4.50 per year, or twice as much as the Studebaker wagon, even though the Studebaker cost $20.00 more at the time of purchase.

The same thing holds good today. Don't let a dealer sell you a wagon "just as good" as a Studebaker, even if you could buy it for $25.00 less.

Studebaker has been building wagons for over sixty years and there are thousands and thousands of farmers all over the country who are using Studebaker Wagons today that were purchased anywhere from 35 to 50 years ago.

And remember, Studebaker Buggies and Harness are just as reliable as Studebaker Wagons.

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Adv. 2003

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IMPROVED LEAMING SEED CORN
High Yielding Prize Winning Strain
Buy seed corn that you know is grown successfully in your section of the country.
1 bushel shelled from choice ears, $2.00
1 bushel of selected ears, 2.50
1 sample ear postpaid, .20
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Green Hill Farm, Burlington, N. J.

PURE FIELD SEEDS
Clover, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer. Free from noxious weeds. Ask for samples.
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FOR SALE—Crimson Clover Seed, $4.00 bushel. Red Clover Seed, $8.50 to $9.50 bushel. Wilson's Black Soy Beans, $2.50 bu. Cow Peas, $2.25 to $2.50 bu. Country Ground Buckwheat Flour, $3.50 bu. Beef Scrap $2.75 bag, or $50.00 ton.
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Main crop varieties. Heavy yielders. No black leg or other dangerous diseases.
I. L. WARE, GARDINER, MAINE

CHOICE SEED POTATOES Bliss, Bovee, Carman, Cobbler, Gold Coin, Hebron, King, Longfellow, Mammoth. 85 kinds C. W. Ford, Fishers, N. Y.

Medium and Mammoth Clover grown in the Miami Valley. Also Alfalfa, hardy Northern non-irrigated seed. All high in germination and purity tests. Prices and samples freely furnished. Mace & Mansfield, Greenville, Ohio.

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For a full line of garden and field seeds try Theilmann's. They carry a full line. Send today for catalog.
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SWEET CLOVER SEED, PURE WHITE AND BIENNIAL YELLOW. Prices and circular how to grow it sent on request. E. E. BARTON Box 8 FALMOUTH, KY.

Clover Seed—1913 Crop. Prices Low. We ship direct. FREIGHT PREPAID. GLICK'S SEED FARMS, R. D. 6, Smoketown, Pa.

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Poultry

SPROUTING OATS IN QUANTITIES

Sprouted oats has become a great favorite as a green food with poultrymen, many using it entirely. It is very easy to raise as it can be grown successfully in almost any place where the temperature can be kept in the neighborhood of sixty degrees. However, to grow it in quantities, and to be sure of a constant supply, as is necessary on poultry farms, it is needful to have an especially arranged place. The accompanying photograph shows a small hot house now being very successfully used for that purpose by a large poultry farm in Chester County, Pennsylvania. The walls of this house (a lean-to) are of concrete and the frame of iron and wood construction, such as can be purchased in various sizes from any green house builder.

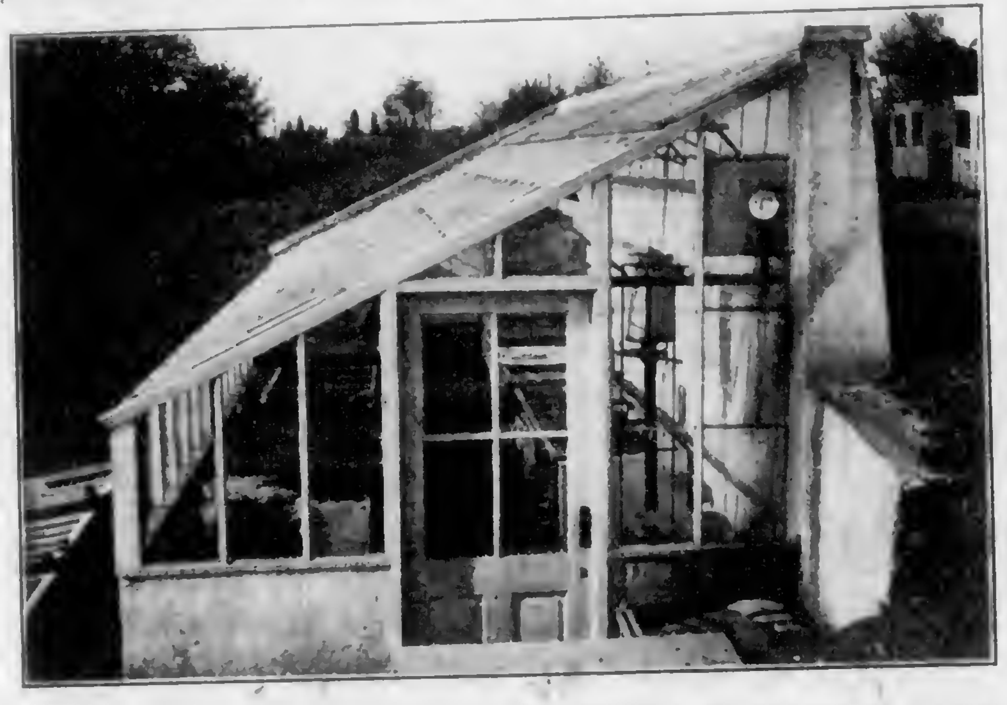
This house has an interior measurement of ten feet wide by thirty feet in length. Along the back and front wall are arranged frame works of angle iron one inch in width bolted together and so arranged as to form slides for wooden drawers. These drawers are two and a half feet square and four inches deep with wire bottoms of the smallest mesh cellar window wire. To keep the wire from tearing off and to make a smooth surface, so as to facilitate the sliding of the drawers in and out, half-inch strips are nailed on top of the wire around the edge of the bottom of the trays where they come in contact with the angle iron slides. It is also best to place one such strip across the center of the wire bottom to help support it and to use as heavy a guage wire as can be obtained. The iron frame work and wire bottom trays are to be preferred to the wooden frame and wood or burlap bottom trays, as with the former there is no trouble of any account with mould, but with the latter such trouble is very common; and nothing will cause more disorders and deaths in poultry than mouldy feed. The slides for the drawers are six inches apart leaving a space of an inch between the drawers. They are placed this close together to keep in the moisture and as far as possible to prevent the air from passing over the oats when first spread out in the drawers and drying it out. The back of the frame work is covered with galvanized iron for the same purpose and sheets of this material are provided to lay across the top when the oats is first placed in the trays, these sheets being removed after growth commences.

The house is heated with hot water heat, the pipes for which pass in back of the galvanized iron on the frame work. There is a passage way of four feet between the front and back row of trays to allow for tending and obtaining with least trouble the oats for feeding. The trays are placed five in height, which is about the height of the average hot house bench. Thus if a table were placed on top of the frame work the house would answer a two-fold purpose. The floor is composed of cinders two feet deep so as to give quick drainage of the water dropping from the drawers when the oats are sprinkled. Four supports 4 by 6, (four-inch side up) two on each side, are placed in the cinders, to which the legs of the frame work for the trays are fastened.

The oats are first soaked in a tub of warm water for about 8 hours. Less soaking than this will cause poor sprouting, while more than half a day will do the same. After the soaking it is dumped into a half barrel which has a perforated bottom to allow the water to drain off. The barrel is then covered with a sack and the oats allowed to remain there, being sprinkled with warm water and turned over with a fork night and morning, until small hair-like roots are noticed shooting out of the oats, at which time they are ready for the trays. In these they are spread out to about an inch or two thick. The set of trays when first started should be kept well protected from the sun and air, which will dry the oats out, thus ruining the germinating qualities. When the shoots have grown about an inch long the trays should be exposed to the sun and air so as to make them green and cause them to grow longer. To do this every other tray should be removed, thus giving the desired space. If the trays are not separated the oats will eventually grow up filling all the space, then heat and burn, making it unfit for use. During growth the oats should be sprinkled night and morning with warm water. Never use hot water for that will scald the oats and kill them. It is unnecessary to turn the oats after it has been placed in the trays. In fact I have found that it does much better if left undisturbed, altho this is contrary to popular practice.

The oats is usually ready for feeding in about ten days, when it is from 4 to 6 inches high. The best way to feed it is to break the oats up in to chunks about the size of a brick and feed on the floor of the house or in the yard once a day, giving one tray to every 300 or 400 hens. It should not be torn up in small pieces, for, in this way the hens will most likely swallow it in such chunks as to cause a crop bound condition which can not happen with the large pieces because the hens pulling it apart themselves only get one or two grains at a time.

Perhaps it would be well to add in closing that oats should not be sprinkled the day it is to be fed and under no circumstances should mouldy oats be fed. To keep down the mould the trays and tubs in use should be scrubbed frequently with scalding water and exposed to the sun. If this is done and your frame and trays are constructed so far as possible of metal you will have but little trouble with bad oats.—J. Raymond Kessler, Chester Co., Pa.



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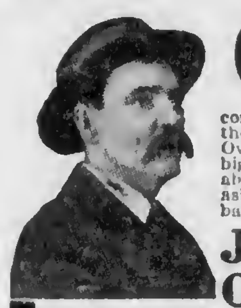

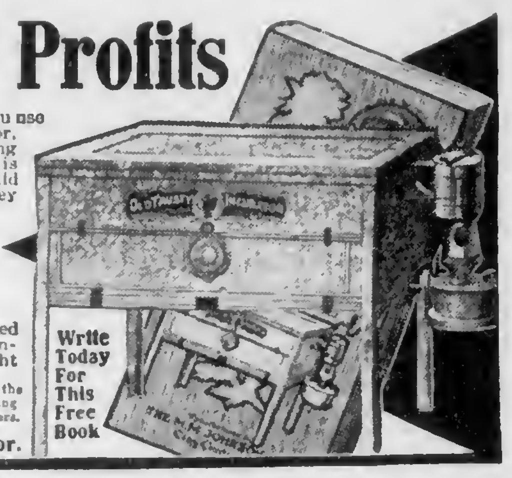

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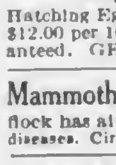

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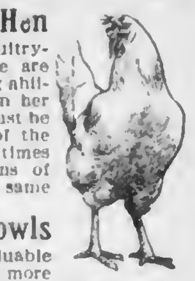

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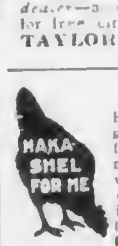

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The Dairy

HOW TO DETERMINE DAIRY TYPE IN COWS

(Excerpts from a Lecture by Hugh G. Van Pelt, of Iowa.)

There are five essential points that must be present and well developed in the external form of a cow if she proves herself a profitable producer of milk and butterfat under present conditions. These are the indications of constitution, capacity, nervous temperament, blood circulation and ability. Therefore in selecting and breeding cows it must be borne in mind that, as important as any four of the essential points may be, they are to a great degree worthless unless accompanied by the fifth.

To avoid confusion and the overlooking of one or more of the significant features of development or the lack of it in any part, it is well to acquire a systematic method of examining the animal. It is always advisable to take in the general appearance of the animal first, for in many instances this is all that is necessary. To the experienced eye the first impression shows it to be faulty in one or more of the essential qualities. This first impression is always gained with greatest accuracy from a reasonable distance while the animal is standing or walking broadside to the observer.

The comparative width across the hips and length in the rump is usually apparent enough so it may be determined by the eye rather than by measurement with the arms, altho in cases where animals are nearly the same in these parts the latter procedure is sometimes advisable. The examination of the mammary system should now take place and if possible should be made in detail by the use of both the senses of sight and touch for many are the indications of ability that escape the eye, and as a rule enough mistakes occur where both faculties are put to work. In completing the examination of a cow it is always advisable to milk or see some one else milk her in order to determine certainly that there are no defects that are not apparent when the udder is full. Many a man has purchased a cow and never discovered her worthlessness in one of more quarters of her udder until she has been paid for and no recourse remained.

Strength of constitution depends primarily upon the amount of pure fresh air that enters the body and the manner in which it is utilized by the lungs in purifying the blood. Quite as important as an indication of vigorous constitution is the size and capacity of the thorax or the chamber in which the heart and lungs are located. Smallness or lack of development in this part of the body prohibit greatness of heart and lung development, resulting in limited stamina, vigor and ruggedness. To insure ample room for the fullest growth of the heart and lungs the cow should be extremely deep from the top of the shoulder to the floor of the chest, fairly broad in the chest, deep in the region of the heart girth and well sprung in the fore rib.

It may be said that usually the cow with eyes that are bright and clear, and horns that are rather heavy at the base and tapering gradually to a point, is more vigorous than the one with the dull sunken eyes and horns that are almost as small at their base as near the point.

The capacity of the dairy cow refers to the total amount of food she can consume and digest in a given time without injuring her future usefulness. It depends upon the size and strength of her organs of mastication and digestion. Capacious cows are always more ravenous feeders than cows lacking in the development of this characteristic and for this reason less difficult to feed. Feeders of all classes of farm animals realize that the animal with the large mouth is a good feeder; that this qualification has come to be one of the recognized indications of capacity. The animal with a small pointed mouth and a small muzzle is always difficult to feed, being dainty and indifferent to the efforts of the feeder to tempt its appetite.

Great milk production points to the significance of an adequate and roomy space where the foods may be stored and digestion carried on. This entails a large barrel, one that is long, broad and deep. These specifications are insured by length from the shoulder to the hip bone, broad, flat, well-sprung, deep ribs. On the other hand, it often occurs that close-coupled cows, those with short bodies that are broad and deep, are excellent feeders and good producers, and if there is to be any sacrifice made in the dimensions of the barrel it is better that length rather than any of the other proportions be overlooked.

The condition and efficiency of the organs of digestion may be determined by the handling qualities of the animal. By carefully lifting the hide from the body there is at once conveyed to the touch one of two sets of conditions; either the hide is soft, pliable and elastic and the hair covering it soft and silky, or the hide is hard, stiff and so tightly drawn over the body that it is impossible to lift it away from the ribs. Such hide is usually covered with hair that is coarse, harsh and wiry, standing out from the body rather than lying smoothly. When the former condition exists, not only quality of all parts of the body is indicated but an efficient digestive tract is also assured. The animal will consume its food, digest it quickly and be ready for more. But when the hide is covered with harsh, wiry hair there is something wrong with the digestive appartus, either temporarily or permanently, and even tho the animal is a gross feeder the best use will not be made of the food.

The term nervous temperament used in referring to the disposition of the cow means the inherent propensity to work, to eat food, digest it and convert every available ounce of it not required for maintenance into milk products. Nervous temperament does not imply that the cow is nervous in the generally accepted meaning of the term, nor does it mean that she is excitable, fretful or hard to manage; but that she is especially strong in the development of the nervous system. It naturally follows that such an animal is always alert, active and responds readily to all surroundings whether they be favorable or adverse.

It is this nervous temperament that enables the dairy cow to endure for a long period greater work than her form, appearance and size would indicate. It is the quality that gives the Arabian horse the endurance which enables him to make long journeys with little food and water. The same characteristic is termed stamina when found in the horse bred for speed. In the dairy cow this trait stimulates the function of milk making. Temperament is always reflected in the eye of an animal. A large, bright, prominent, placid, alert eye with an intelligent expression gives assurance of nervous temperament as represented by these parts.

Prominent hips and ribs that are apparent to the eye and freedom from breefiness or superfluous fat over the entire body are all important indications, for they denote that the nervous temperament has stimulated the conversion of the food into milk and butter fat rather than into beef, which would be the case if the animal was endowed with a phlygmatic temperament. Add to these points style, activity and freedom of carriage, alertness and consciousness of all surroundings and you may guarantee that the cow possessing these is a worker.

The volume of blood which circulates past the digestive apparatus and, in turn, thru the udder or milk-making factory has much to do with the amount of milk and butterfat produced. The volume of circulating blood and the direction in which it flows are indicated by the escutcheon, mammary veins and milk wells. The escutcheon that is long and wide, extending down over a portion of the udder, is an indication of a large amount of blood passing into the udder, taking with it large amounts of nutrients.

Invariably the greater the development of the mammary veins designated by their length, size and tortuousness, the larger and more numerous the milk wells, the more productive the cow. Veins range in size from that of a man's thumb to those only large enough for the insertion of the small finger. These features point to the fact that a wonderful volume of blood has passed thru the udder.

Ability, used in describing the cow, refers to her powers of performing her required function of milk giving. Altho ability is synonymous with capacity the difference in meaning is great enough to justify their use in differentiating between the cow's receptiveness for food and her power for manufacturing the nutrient from the food into milk products. Size, form and texture of udder development are the principal indications. Size should be sought in length and breadth of udder rather than in depth, for several reasons. Largeness of udder gained by depth results in a pendent udder, one that hangs from the body and dangles or swings between the legs. Such udders are disagreeable to milk.

Of all forms of the udder the most desirable is the one symmetrical and uniform in the development of each portion. Each quarter and half should correspond with the other, and be so closely connected as to make the juncture almost invisible. With size added to the udder of this form there is ample room for the placement of four easily milked teats of medium size set far apart, one for each quarter. As for the true length of udder, the best indication is the length from the hip bone to the pin bones. When the cow is fresh and her udder is full, a plumb bob ropped downward from the point of the ip bone falls immediately in front of the udder. Consequently, if the length from the hip bones to the pin bone is great, the length of the udder will be correspondingly great. Even tho in certain individuals that droop at the rump the udder is not very perceptibly faulty it may be taken as a rule that if offspring are continuously bred from animals of this conformation the associated characteristics will in time follow.—J.

EXAMINATION OF CATTLE FOR INTERSTATE SHIPMENT

"Under what conditions can I ship milk cows or heifers from New York to Pennsylvania? Would they have to be tested by a New York veterinary or a Pennsylvania veterinary, or both? C. A. G., Brockton, N. Y."

All cattle over six months old, except for immediate slaughter going from New York to Pennsylvania or vice versa, must be subjected to a physical examination and a tuberculin test by a qualified and licensed veterinarian. He may reside in Pennsylvania or New York. Before his examination and test can be accepted his honesty and reliability must be certified by J. G. Wills, State Veterinarian, Albany, N. Y., or C. J. Marshall, State Veterinarian, Harrisburg, Pa.

The examination and test must have been made within a few days previous to shipment and must show that each animal is free from tuberculosis. Special arrangements may be made for a permit to bring cattle into Pennsylvania and have them tested and examined by communicating with the State Veterinarian of Pennsylvania, before the cattle are shipped. A record of the examination and tuberculin test or the permit must accompany the cattle in transit. A copy of the examination and test must be sent to the State Veterinarian at Harrisburg within one week after the cattle are received in Pennsylvania and the duplicate sent to the State Veterinarian of New York. —M.

VALUE OF DETAILS

Many farmers have entered the dairy business with fascinating hopes and lively expectations and later found an ending with disappointment and failure. The reasons assigned for the failure are as various as the men who give them, but nine times out of ten the thing that directly contributes to the failure is a waning interest in attending to the minor things that go with the management of the herd.

Nothing contributes more to the health and productivity of dairy cows and young things than daily attention to their needs. The spasmodic enthusiast who feeds and cares for his cattle according to his immediate impulse is seldom a successful dairyman. Good care can not be handed out in big packages. The animal which is comfortable, without thirst or hunger from day to day, and not subjected to debilitating influences, maintains a healthy, steady advance in growth, flesh and milk production. Every day or week of neglect is followed by stagnation of nutritive processes and the loss of flesh condition and milk yields. In a hundred ways the income from the dairy may be lost by the man who is too busy here and there to attend to all the details. The dairyman can never shake off responsibility; his uniform management every day alike, measures his success.—W. K.

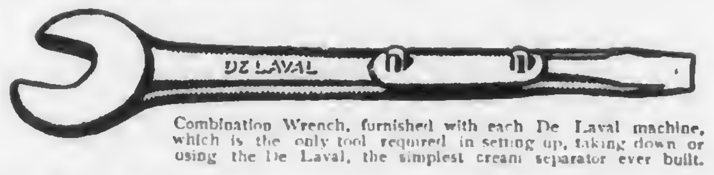
The Simplest CREAM SEPARATOR Ever Built —

DE LAVAL

EXCELS ALL OTHERS not only in thoroughness of separation, sanitary cleanliness, ease of running and durability, but as well in its great simplicity.

THERE IS NOTHING ABOUT THE OPERATION, cleaning, adjustment or repair of a modern De Laval which requires expert knowledge or special tools.

NOR ARE THERE ANY PARTS WHICH REQUIRE frequent adjustment in order to maintain good running or to conform to varying conditions in the every day use of a cream separator.



Combination Wrench, furnished with each De Laval machine, which is the only tool required in setting up, taking down or using the De Laval, the simplest cream separator ever built.

THERE IS NOTHING ABOUT THE MACHINE THAT cannot be taken apart, removed or replaced by any one who can use a wrench or screw driver. In fact, the only tool which is needed in the use or the operation of a De Laval Cream Separator is the combination wrench and screw driver illustrated above, which is furnished free with every machine.

The De Laval Separator Co.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE
50,000 Branches and Local Agencies the World Over

Away With Churns!

Use the "Fayway"—Get More and Better Butter Stop Old-Fashioned, Wasteful Churning!

$1.00 Brings It

This marvelous machine is NOT A CHURN—it's a BUTTER MAKER! Does the work in half the time of the best churn. Gets MORE butter and BETTER butter from the *same cream* than by any other known process. The greatest MONEY MAKER for farmers and dairymen ever introduced. Makes your butter *bring more per pound!*

Revolutionizes Butter Making!

Fayway TRADE MARK **Butter Separator**

The "Fayway" System produces butter by an entirely different process—no "whipping" or "beating" with paddles or blades. *A stream of air blows the billions of butter globules to the top*—gets ALL the butter-fat!

Made in 3 Sizes

How It Works Just pour in the cream, turn the crank a few minutes and—*presto!*—there's the *butter!* Actually *fun* to make butter with the "Fayway"—all drudgery *abolished!*

Amazing Results

"Fayway" butter has a beautiful waxy texture. Tastes better, keeps longer, brings 5c to 10c more per pound than ordinary "churned" butter, and you get more of it.

Our $1.00 Deposit Trial Offer

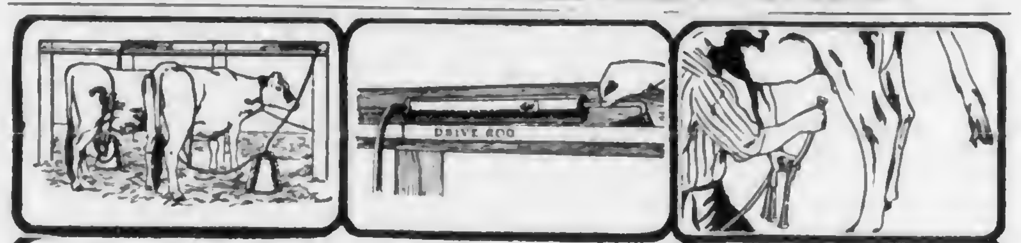
We don't ask you to take our word. We want you to SEE with your own EYES how the "Fayway" makes butter. Send for our $1.00 Deposit Plan on which we will ship this amazing machine for a free trial in your own home. If it doesn't do exactly what we claim, back comes your dollar!

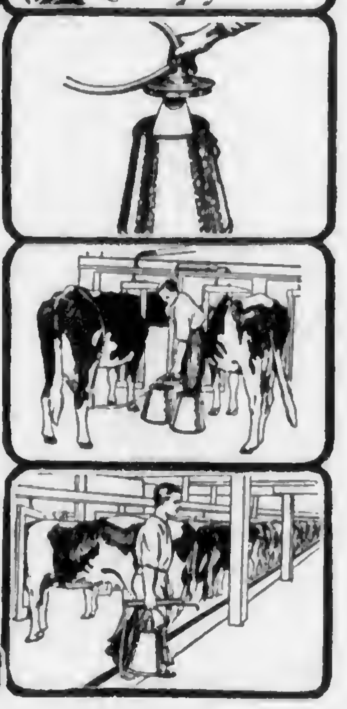
Don't send any money, but

Write for Free "Fayway" Book

This book tells all about the FAYWAY—the greatest invention since the cream separator was brought out. Let us tell you about Fayway Butter Clubs.

THE BLANTON & McKAY CO., 437 Carr Street, Cincinnati, Ohio





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—and the HINMAN MILKER is at work again

The operator is weighing and recording each cow's milk. No time is lost changing and adjusting the machine. It's so simple—light—and easily handled. The operator is milking from 20 to 25 cows per hour and doing a thorough job. Nothing to watch and worry about—just the simple, silent, steady operation from start to finish—and the work is done.

Moving the HINMAN

An Hour's Recreation To Milk 25 Cows with the Hinman

Watch the Hinman operate and draw your own conclusions. An outfit is near you—investigate. The HINMAN is original. It meets all requirements of any dairyman.

It is the only milker using a drive rod; rapid-pail-changing idea; separate machines; valve chamber—no vacuum in pail. It takes care of itself.

Let the HINMAN help you to get more money out of your dairy. 65,000 cows milked daily. Agents everywhere.

HINMAN MILKING MACHINE CO.
75-85 Elizabeth St., Oneida, N. Y.

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$15.95 AND UPWARD ON TRIAL.

AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION to send fully guaranteed, a new, well made, easy running, perfect skimming separator for $15.95. Skims warm or cold milk; making heavy or light cream. The bowl is a sanitary marvel, easily cleaned.

Absolutely on Approval. Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address:

AMERICAN SEPARATOR CO. Box 1062 BAINBRIDGE, N. Y.

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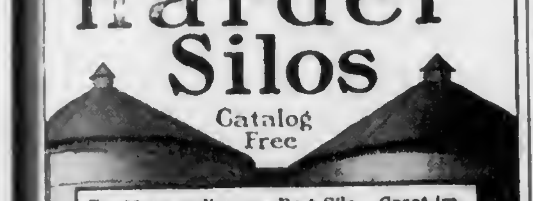

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It will pay you to write us today for free catalog of Harder "Quality" Silos.

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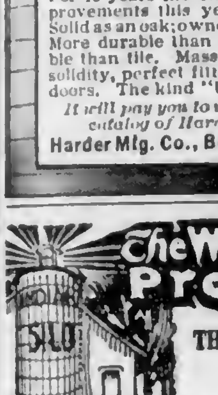

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We have a few choice registered Guernsey Bull Calves for sale from A. R. cows by prize winning bulls. Our herd bull was Grand-Champion at Trenton Fair last fall. We also had Grand Champion Guernsey cow.

Write for sale list with breeding and description or better yet pay us a visit.

ELLENWOOD FARM
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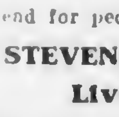
Three grandsons of King of the Pontiacs, one year old and ready for service. Individuality the very best. One is dark, two light colored. Sire is a son of King of the Pontiacs from a 25-lb. three-year-old, her dam a 22-lb daughter of Hengerveld De Kol and full sister to the dam of our 37-lb cow. Dams of these bulls all have official records and splendid backing.—Must be sold before February 23rd.

Send for pedigree and price.

STEVENS BROTHERS CO., Liverpool, N. Y.



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The pure-bred **Jersey Cow**

is one of the most high-grade animals ever developed by man. The high-grade farmer demands the high-grade cow. No breed equals the Jersey for the economical production of high-grade milk and butter. No breed equals the Jersey for intensive farming.

Send for information to
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WORLD'S RECORD AYRSHIRES. CHAMPION BROWN KATE, 23022 lbs. milk in one year, WHITE BEAUTY, 60945 lbs. of milk in 5 yrs. Their sons head our herd. Bull calves from Advanced Reg. dams for sale. **Berkshires:** The big kind. Both sexes. All ages **Penhurst Farm, Narberth, Pa.**

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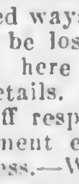

Be an early buyer and save money on a Kalamazoo Wood or Tile Silo. Galvanized All-Steel Door-Frame provides continuous opening and safe, convenient ladder. Your choice of Tile Block Silo or seven kinds of wood—all Kalamazoo Quality. Catalog and special offer, free on request. Write today.

KALAMAZOO TANK & SILO CO., Kalamazoo, Mich.
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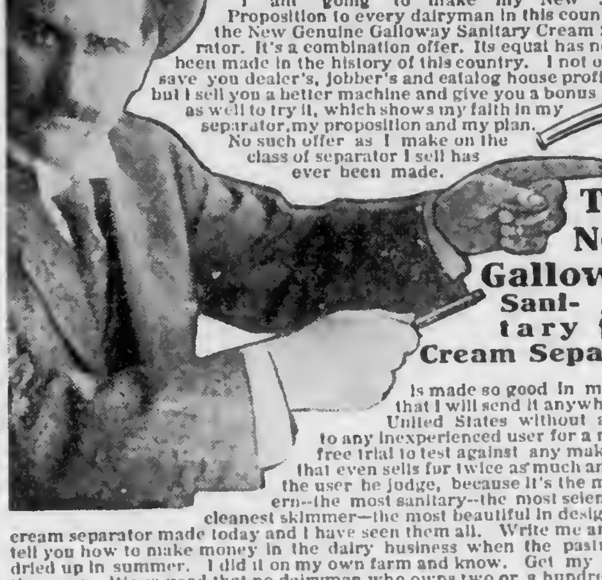
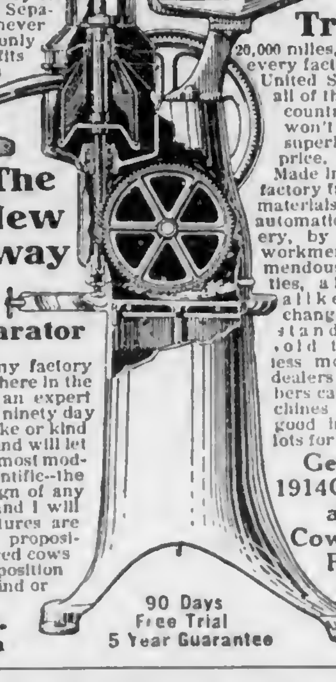
LISTEN! Read This Twice



For five months starting February first I am going to make my New Special Proposition to every dairyman in this country on the New Genuine Galloway Sanitary Cream Separator. It's a combination offer. Its equal has never been made in the history of this country. I not only save you dealer's, jobber's and catalog house profits but I sell you a better machine and give you a bonus as well to try it, which shows my faith in my separator, my proposition and my plan. No such offer as I make on the class of separator I sell has ever been made.



The New Galloway Sanitary Cream Separator

is made so good in my factory that I will send it anywhere in the United States without an expert to any inexperienced user for a ninety day free trial to test against any make or kind that even sells for twice as much and will let the user be judge, because it's the most modern—the most sanitary—the most scientific—the cleanest skimmer—the most beautiful in design of any cream separator made today and I have seen them all. Write me and I will tell you how to make money in the dairy business when the pastures are dried up in summer. I did it on my own farm and know. Get my proposition now. It's so good that no dairyman who owns two or a hundred cows can afford to be without it. All I ask you to do is to first get my proposition before you decide to purchase any cream separator of any make, kind or at any price. Just drop me a postal. Address

Travel 20,000 miles, look over every factory in the United States and all of the foreign countries—you won't find its superior at any price.

Made in our own factory from finest materials on best automatic machinery, by skilled workmen, in tremendous quantities, all parts alike, interchangeable, and standard and sold to you for less money than dealers and jobbers can buy machines not as good in carload lots for spot cash.

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Only **$2 DOWN and One Year To Pay**

For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

$24 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of **only $2 down and a year to pay.**

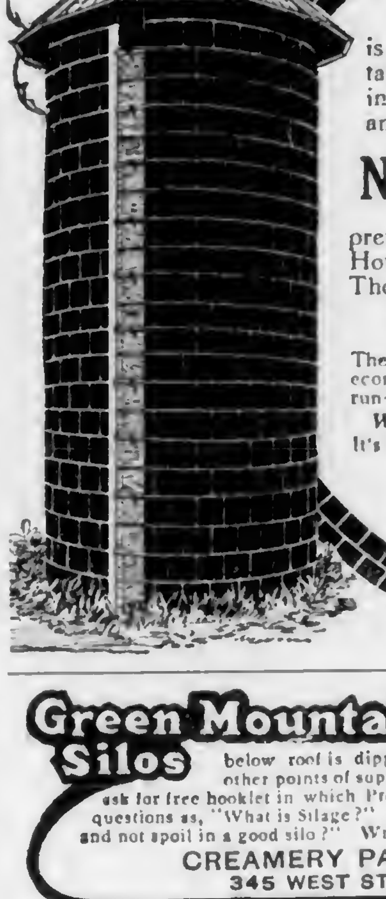
Patented One-Piece Aluminum Skimming Device, Rust Proof and Easily Cleaned — Low Down Tank — Oil Bathed Ball Bearings — Easy Turning — Sanitary Frame — Open Milk and Cream Spouts.

30 DAYS' FREE TRIAL GUARANTEED A LIFETIME

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save half. Write TODAY.

No. 5½ Over 20,000 now in use

Albaugh-Dover Co., 2197 Marshall Blvd., Chicago, Ill.



This Book About a Better Silo

is attractively illustrated and describes in detail the principles and construction essential in a silo to preserve its contents in fresh, sweet and succulent condition. It shows *why* the

Natco Imperishable Silo

prevents ensilage from souring, molding or rotting. How it saves repair bills and requires no painting. The permanent silo—lasts for generations.

Weatherproof — Decayproof — Verminproof — Fireproof

The **Natco** Imperishable Silo is the most economical for you to build in the long run—its first cost is the only cost.

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It's full of information stock feeders should know before buying a silo.

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NATIONAL FIRE PROOFING COMPANY
Philadelphia, Pa.

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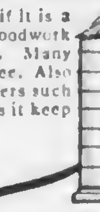

YOU buy only once in a lifetime if it is a "Green Mountain." All woodwork below roof is dipped in pure creosote oil preservative. Many other points of superiority described in handsome catalog, sent free. Also ask for free booklet in which Prof. Esten, of Conn. Agricultural College answers such questions as, "What is Silage?" "Why is it the best Cow Feed?" "Why does it keep and not spoil in a good silo?" Write today for Green Mountain literature.

CREAMERY PACKAGE MFG. COMPANY
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Now offers for Sale a pure bred Holstein Bull, born March 23, 1913, who is ready for service. He is sired by Artis De Kol Walker, 2nd, No. 72921 whose dam and sires' dam average for 7 days butter 31.71 and for 30 days 125.07 lbs. The dam of this bull is a granddaughter of the great Hengerveld De Kol and has a 7 day record of 19.67 lbs. of butter, the granddam has a 7 day record of 22.34 lbs. butter and is the dam of 3 A. R. O. daughters. The great granddam has a 7 day record of 20.02 lbs. butter. Great Backing. Price $250.00 with all papers. Crated f. o. b. cars here.

H. H. WHEELER, - West Winfield, N. Y.

Holstein Cattle of the most fashionable breeding. Bull Calves only for sale. B. F. JONES, South Montrose, Pa.

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Heifer calves, high grades 7/8 Holsteins, $15 each, crated on cars Tully, 1 week old, express paid if 5 or more ordered at one time. Registered and high grade cows; also registered bulls. Branch address: Plainlyn Farm, Fairview Village, Pa.

REAGAN BROS., Tully, N. Y.

Pure Holstein Bull, born Oct. 17, 1913. A fine individual. Registered and transferred, $65.00. Amos Vastine, Elysburg, Pa.

Jerseys—Blood of Sultana's Oxford Lad, Golden Fern's Lad, Eminent. Calves, both sexes. Fred G. W. Runk, Allentown, Pa.

PENNSYLVANIA FARMER

AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

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Entered as second-class matter at the postoffice at Philadelphia, Penna.

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Philadelphia, Pa., February 21, 1914.

County Demonstrators A number of counties of the East have had a year or more of experience with the county agent or demonstrator service. If the Lever bill becomes a law, as now seems probable, this service will be greatly extended in the next few years. Enough work has already been done to make possible a few general conclusions as to the practical value of the plan and indicate some of the possibilities in its future extension. It is a well known fact that a considerable number of farmers have little confidence in the county agent plan. The article on page 3 of this issue presents the views of a leading farmer of this state on the service. We believe that he presents the views of quite a proportion of our farmers and his objections carry weight which must be taken into consideration by the agents and the institutions back of them. It is perfectly natural that there should be objection to the plan and even some prejudice against it until all may become acquainted with the real purposes of the work and the agents have had an opportunity to prove themselves. But it is significant that objection has been greatly reduced and in most cases entirely removed in those counties that have had a trial of the agent plan, and in many counties the previous prejudice has turned to enthusiasm in favor of the work. A feature, however, which should be particularly significant to the men and institutions having the work in charge is that the counties that have seemed to profit most and are in heartiest support of their agents have taken up their work on lines that include more than mere production methods. It is an easy matter to present figures to show that crop yields and acreage production might and should be increased. But the practical minded farmer must be shown how such increase in production is going to increase profits before there will be any enthusiastic response to demands for improved methods. The teachers and the statisticians may know that better methods mean larger returns with less labor and less acreage, but they must demonstrate the fact before there will be any considerable following of their counsel. The easier and more logical way is thru organization work looking to the elimination of waste and leaks and the return to the farmer of a larger net profit on the things he has to sell. The farmer has long known that he is at a disadvantage thru lack of organized effort. He has sought for a remedy but has lacked the organization and the leadership necessary to find or provide a way. The county agent plan provides a leader, and if he is of the proper caliber and is so inclined, he can provide the organization. When he has assisted in bringing to his patrons a larger relative return for the things they raise, he will have less difficulty in inaugurating better systems of production. Much of the success of the county agent system will depend upon the agent's ability to "size up" the needs of his county as a whole and direct his attention towards meeting those needs. The South undoubtedly needs specialization on production methods. Certain counties in every state in the East and North need it; but in every case the first need is organization for effective local work in the things which will be of the greatest value to the county as a whole. The agents themselves must appreciate this fact and the state and federal institutions behind them must recognize it. This means that these institutions must give greater attention to economic lines than they have in the past, and be prepared to back up their agents in organization work as well as in research and scientific work. It must be expected that there will be some mistakes and some failures. The field is an entirely new one, and there are no precedents to be followed; but the progress made by a few counties in a few months under the county agent plan shows possibilities of the service which are worthy of support.

Parcel Post Endangered The express companies, thru friends in Congress, are still stubbornly fighting parcel post. The Senate committee on post offices, in its revision of the post office appropriation bill, reported February 13, proposes to take from the Postmaster General the right to change rates and limits of weight for parcel post service. Members of the committee charge that the recent decrease in rates and increases in weight limits are causing a deficit in postal revenues which will have to be met out of general funds, and that the power of fixing weight limits and rates should rest with Congress. The Postmaster General replies that the recent changes have resulted in increased revenues, and that the parcel post service is now self-supporting. These are the assertions on both sides. To anyone knowing of the long fight that was waged against parcel post by the express companies and their "friends" in Congress, it is readily apparent that the question of cost of the parcel service is of minor importance in this controversy. The recent advance in weight limit from 20 to 50 pounds made the postal service a very serious competitor of the express companies, and the apparent preference of the public for the postal service has renewed the efforts to curtail further expansion. The change in the administration of the law proposed by the Senate committee would benefit no one but the express companies. There could be no mistaking of motives in such a change, and the public should not hesitate to express its emphatic disapproval of any interference with the complete development of the parcel post. The service was delayed long after other countries were enjoying its advantages. Now that it has finally been established and we have a Postmaster General who shows a genuine desire to make it of maximum value, the congressional members should be made to understand that they must keep hands off.

Farm Animals Statistics on numbers and value of farm animals on farms and ranges on January 1, 1914, recently issued by the U. S. Department of Agriculture, are interesting as showing the trend of farm live stock population in the past four years. They show a steady decrease in meat animals, the heaviest decline being in beef cattle. Compared with January 1, 1911, horses have increased in numbers 685,000 and in total value, $31,657,000. The average price of horses has declined $2.14 in the past four years but the increased numbers raise their aggregate value. Milk cows show comparatively little change in numbers in the four-year period, there being 20,737,000 head on January 1, 1914, as compared with 20,823,000, on January 1, 1911, a decrease of 86,000 head. The average price per head, however, has increased from $39.97 in 1911 to $53.94 in 1914, making an increase per head of $13.97, and an increase in aggregate value of $286,278,000. Cattle classed as other than dairy cows decreased 3,824,000 head in the four-year period. The average price per head increased $10.59, making an increase in aggregate value of $301,119,000. Sheep and swine are the two classes that have decreased both in number and value. Sheep showed a decline of 3,914,000 head in the four years; an increase of only 13 cents in average price per head, making a decrease in aggregate value of $8,732,000. Swine decreased 6,687,000 head; average price per head advanced $1.03, making a decline of $2,219,000 in aggregate value.

PENNSYLVANIA WINNINGS AT NATIONAL CORN SHOW

The National Corn Show now open in Dallas, Tex., is the most extensive in scope and variety of any yet held, and the quality is fully up to that of last year. The show is comfortably housed in the substantial permanent buildings of the Texas State Fair Grounds. Eastern entries are making a very favorable showing. The Pennsylvania exhibit is in charge of Prof. Frank D. Gardner, of State College. The state exhibit was late in arriving and had to be rushed to get it installed. It is also lacking in a number of entries for which premiums had been offered. The management did not get the premium list from the presses until the opening day of the exposition, and states were not fully advised as to premiums to be offered.

Leading Awards

Judging began February 9, and was still in progress at the date of mailing this report. National Sweepstakes for best 10 ears of any kind of corn was won by Indiana and National Sweepstakes Single Ear was won by Illinois. Eastern Zone and Pennsylvania winnings were as follows:

Eastern Zone

Grand Championship.—10 Ears Any Corn.—A. B. Twining, Forest Hill, Md. Grand Champion Ear, A. B. Twining. Yellow Dent, Single Ear—A. B. Twining. White Dent, Single Ear—B. W. Buckman, Wrightstown, Pa. Other Dent, Single Ear—Harry B. Herr, Lancaster, Pa. Flint, Single Ear.—Harry Rockwell, Canton, Pa.

Sweepstakes, 10-Ears: Yellow Dent—Jesse L. Eisiminger, Waynesburg, Pa. White Dent—A. B. Twining, Md. Other Dent—Harry B. Herr. Flint—J. J. Sheehan, Canton, N. Y.

Pennsylvania

Ten Ears Yellow Dent.—1st. Jessie L. Eisiminger; 2nd. Burton Bayard, Waynesburg; 3rd. Leasure Eisiminger, Waynesburg.

Ten Ears White Dent.—1st. Benjamin Harris, Newtown; 2nd. Dr. Vallie Hawkins, Fawn Grove; 3rd. B. W. Buckman, Wrightstown.

Ten Ears Any Other Dent.—1st. Harry B. Herr; 2nd. David B. Landis, Lancaster; 3rd. Valley Hill Farm, Phoenixville.

Champion Ten Ears, Any Variety.—Jesse L. Eisiminger.

Ten Ears Flint Corn.—Harry Rockwell, Canton.

Single Ears—Yellow Dent.—1st. Leasure Eisiminger; 2nd. Burton Bayard; 3rd. A. and T. Crowell, Avondale.

Single Ears—White Dent.—1st. B. W. Buckman; 2nd. Dr. Vallie Hawkins; 3rd. W. B. Cloud, Kennett Square.

Single Ear—Any Other Dent Corn.—1st. Harry B. Herr; 2nd. David M. Landis; 3rd. Valley Hill Farm.

Single Ear—Flint.—1st. Harry B. Rockwell.

STATE CAPITAL NEWS

Forthcoming Bulletins.—Bulletins are to be issued shortly by the State game commission giving information regarding species of hawks and owls. The placing of a bounty on some kinds of hawks has led to the killing of useful ones and to people getting into trouble for killing protected birds. Dr. Surface will put out a new bulletin on San Jose scale and the parasites which kill it, giving the results of the latest studies on the subject, while the department of agriculture is contemplating one on the soils, another on the cheese industry and some valuable information on wages.

Paying For Fairs.—Auditor General Powell and State Treasurer Young have begun the payment to counties of shares of the state funds as reimbursement for aid to agricultural exhibitions or county fairs. This payment was for sometime in question as it was doubted whether the appropriation complied with the very strict provisions of the organic law and the "specific appropriations" act, but an opinion from the attorney general's department and a few precedents appear to have straightened matters and about half of the $100,000 available is being paid.

Auto Revenue Controversy.—Renewed steps are to be taken by the State Highway Department and the attorney general's office to obtain some of the hundreds of thousands of dollars paid in for licensing of automobiles for use in maintenance of State main highways this summer. The last mandamus suit was sidetracked because it made a demand for money under an act which did not go into effect until later. This new proceeding will be for a certain share of money known to have been paid since January 1 and will open the way for a court determination of the much mooted question as to whether the money was legally appropriated by the legislature of 1913 or whether some one made a colossal blunder in imagining that it could be counted in as available for road improvement in 1913 and 1914.

Supervisors' Meeting.—Supervisors in charge of township roads thruout the state are holding conventions at county seats just now and practically two thirds of them have been organized into associations. At these meetings the beneficient purposes of the township bureau act with its free advice and plans and specifications are explained, but up to date no use of road drags, scrapers, road rollers or stone crushers bought by the Highway Department last year and not likely to be used this year because of the lack of funds, has been offered to the township authorities. If some of the machinery lying along the roads or stored in various counties could be put into the hands of township supervisors with a representative of the State Highway Department to instruct in its uses after the weather moderates and the road working season opens it would be of great value.

Getting Together.—People who have suffered from the results of laws passed in pursuance of political propaganda and who saw the jockeying over the employment bills and the fight over the liability bill last session will note with particular pleasure the efforts of the department of labor and industry to get people interested in various phases of the women and children's employment laws on a basis of understanding what each side wants and of then formulating legislation plans.

Grade Crossings.—The Public Service commission has completed a set of regulations for the crossing of steam and electric railroads and hereafter all drafts of cars being shifted must carry a rear light. It is expected that a new set of rules governing over 10,000 or more grade crossings in the State will soon be given out.

The Chicken Hoax.—Singular as it may seem some of the State offices here have been receiving complaints about the activities of some individuals who have been victimizing people in rural districts thru pretension of being chicken inspectors, in some cases fowls or eggs as "samples" having been secured. The only persons authorized to act on any inspection work which might include chicken coops or barnyards are agents of the State Live Stock Sanitary Board, and these officers are supplied with badges or other evidences of official position and must show them on request.

More State Police.—It seems highly probable that owing to the demand of people in rural districts for more state police an increase of the constabulary will be authorized by the next legislature, although opposition will be encountered from the members from industrial districts. Unfortunately, in spite of the service of the state police the prejudice against them is as strong as ever in certain sections of the state altho farming communities are now reported as anxious to have the presence of the troopers.

Using Forest Reserves.—Father Penn's forest reserves are being variously utilized. In addition to the new penitentiary now being erected on the reserves in Centre county it is proposed to locate on state lands the new reformatory for women and girls and the cottage colony for feeble minded women. The former institution is to be similar to that at Huntingdon for boys and the latter will relieve counties from the care of women of child bearing age who are obviously feeble minded.—Hamilton, Harrisburg, Feb. 16.

NEW JERSEY FARM NEWS

Good Crops at State Farm.—Last year was another season of bumper crops at the farm connected with the State hospital for the insane. The total value of the farm products was $31,832.42, as against $30,612.47 for 1912.

Appropriations For Water Ways.—Congressman Thomas J. Scully, of the Third District, who is the first Jerseyman ever to serve upon the important Rivers and Harbors Committee, has been successful in securing total appropriations for the rivers and harbors of New Jersey of $2,050,800. The farmers of the State should welcome these appropriations with joy, for it means the revival of the steamboat industry. That will mean for the farmers, lower freight rates, lower charges for cartage, because the truckmen can secure the produce at convenient wharves instead of having to make the long trip to the railroad yards in Jersey City or Camden; and also that the produce will reach the market fresh and dustless, thereby commanding a higher price.

Weights and Measures.—William L. Waldron, superintendent of this State department says that every thing should be sold by weight. He regards such a system as practicable. In 1913 the total number of devices tested and sealed by his department was 294,999, of which 13,374 were condemned and confiscated as below the standard. There were 199 prosecutions during the year, the fines collected aggregating $4,617. Under the basket law of last year the department has confiscated thousands of odd-sized baskets which have been replaced by standard sizes. It is suggested that the basket law be amended by imposing penalties and compelling basket manufacturers to mark legibly on each basket its capacity.

Campaign for Good Seeds.—The State-wide campaign for good seeds is on in earnest, and already a seed salesman has been arrested for a test case. This man sold a farmer two bushels of seed guaranteed to be red clover. The seed was transmitted to Prof. J. D. Helyar, State Seed Analyst, and he discovered that the seed was composed of 56.03 percent German millet, 42 percent clover, and the rest was weed. The mixture cost the salesman $4.29 a bushel and he sold it for $9. This same salesman also offered the farmers a seed he called Australian clover at 30 cents a pound, which Mr. Helyar says is really crimson clover worth about ten cents a pound. Other complaints have been made of similar transactions and further arrests will probably follow. Efforts will also be made to strengthen the present seed law before the Legislature adjourns.

Farm Exhibit Cars.—The Pennsylvania Railroad has sent out two farm exhibit cars for the purpose of interesting the farmers in more scientific methods and the improvement of their crops, both in quality and quantity. More perishable freight was shipped out of South Jersey last year than from the whole of Florida. These exhibition cars are under the charge of H. L. Lippincott, the chief agriculturist of the railroad. An expert from the State experiment station and a dairy expert are accompanying the cars, the second one of which is given over entirely to a display of dairy products.

Standard Cranberry Barrel.—The State Cranberry Growers' Association and the State department of weights and measures have both endorsed the bill by Senator White, of Burlington county, fixing a standard size for cranberry barrels. The bill provides that the standard cranberry barrel shall measure, Head, 16 1-4 inches in diameter; staves, 28 1-2 inches long, and not more than 4-10 of an inch thick; bilge, 58 1-2 inches outside circumference; distance between heads, 25 1-4 inches. Such barrels, the bill provides shall be branded or stenciled in a durable manner "Standard." This act is to take effect July 1, 1915.

New Road Bills.—Several new road bills have been introduced. One of the measures authorizes the appointment of a counsellor-at-law from the attorney-general's department, the State commissioner of public roads, one member of the Senate and one member of the House of Assembly as a commission to revise the laws relating to the improvements of roads, and appropriates $1,500 for the work. The other bills amend the road improvement act by providing that any county engineer holding office at the time of the adoption of the act shall be eligible for appointment as State engineer and the county supervisor shall be eligible for appointment as State highway foreman without examination; directs the commissioner of public roads to designate the route of the Lincoln highway; authorizes the appointment of county engineers as State resident engineers and assistant engineers; provides that the State shall aid in the construction or operation of bridges taken over under the provisions of the road improvement act of 1912; provides that the State shall pay the State engineer and his assistant when actually working for the State. Another of the bills amends the road improvement act of 1912 by providing that contracts shall be awarded to the lowest responsible bidder, whenever the board of freeholders shall deem it advantageous to secure bids on different classes of construction, or on guarantee of the duration of a pavement.

Urges More Normal Schools.—A. J. Rider, treasurer of the State Board of Agriculture, after careful consideration, and discussion with educators and others, makes the announcement that the State should provide a normal school in the Southern part of the State where teachers would be trained exclusively for service in the rural schools.—D. T. Hendrickson.

NEW YORK LETTER

Farmers' Week at Alfred.—From February 23 to 26, the sixth annual Farmers' Week exercises will be held at the State School of Agriculture at Alfred University. There will be about 70 lectures during the week besides which there will be a special program for teachers on one day and for women on another. The pricipal speakers will be Commissioner Huson, acting director Stocking, Dean Baker and Prof. Alva Agee, of New Jersey.

Dr. Schurman's Plan.—President Schurman of Cornell has recently suggested a scheme for a state wide campaign of agricultural education. He would have the agricultural college the "brains" of the system with other centers of education which would be in the nature of agricultural departments of high schools rather than as separate secondary schools of agriculture. The teachers in these agricultural departments would co-operate with the Farm Bureau agents and thus form an effective educational combination.

Great Store of Apples.—One does not get an accurate idea of the apple growing industry in this state by casual reading. Here are some condensed facts about the apple crop. There is at the present time in cold storage at the principal points in the western apple districts of the state about 517,000 barrels and 25,000 boxes. This last item is full of meaning which is that Western methods of packing are being adopted on a large scale. The 25,000 boxes are all in storage at Canandaigua. In view of the fact that the greater part of the crop has already been marketed, the apples now in storage really represent only a small part of the entire crop of the western New York apple district. It has been figured that it will require 3450 cars to move the stored crop which if made up in a solid train would extend 26 miles. The three largest storage quantities are at Albion, 78,000 barrels; Lockport, 67,000 barrels; Medina, 64,000 barrels.

News Items.—Gov. Glynn has named the state commission on the milk laws. Dr. Herman Biggs, state health officer, is at its head. State master Vary and secretary Giles of the state grange are on the committee. Gov. Glynn has sent a special message to the legislature on the necessity of establishing co-operative enterprises thruout the state, appointing experts in co-operation to instruct farmers how to organize, and to organize receiving stations in the large cities and shipping stations in the country to facilitate selling more direct to consumers. The legislature will not appropriate any money for the erection of more new buildings at the state fair grounds this year. The fair commission has decided not to hold a two weeks' fair. The state canals carried 2,602,035 tons of freight last year, of which 564,677 tons were thru freight. The Erie canal carried 1,788,453 tons.—D.

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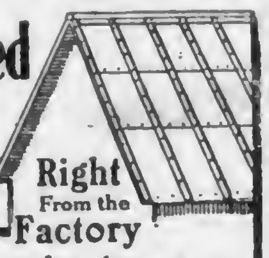

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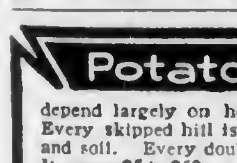

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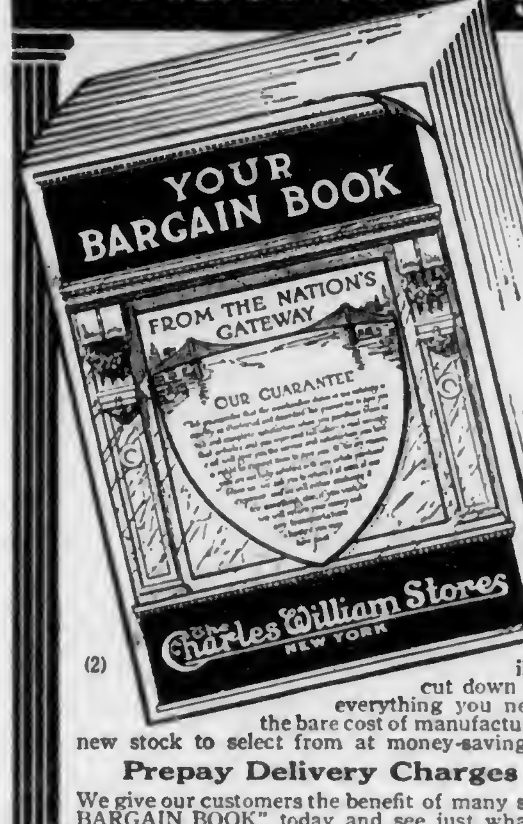

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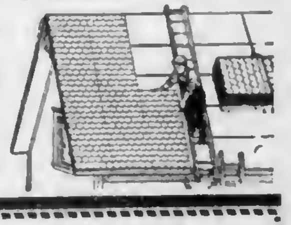

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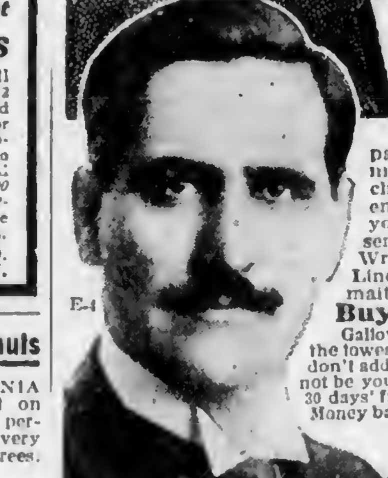

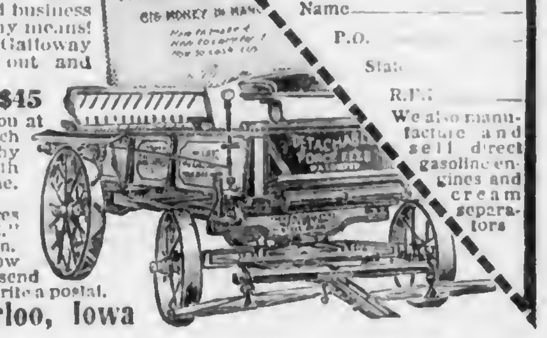

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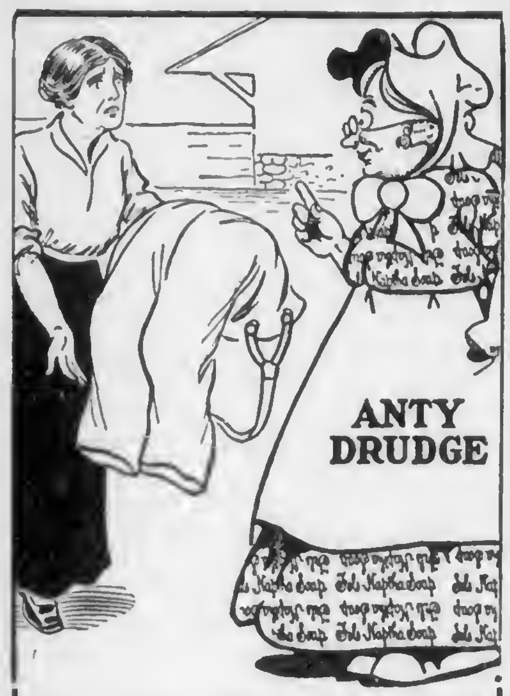

Mrs Cornlassel: "Oh, dear! Just look at this! And smell it! John caught a skunk in the hen house last night—and his shirt and trousers are ruined. He didn't know what it was in the dark. I'll *never* get the smell out."

Anty Drudge: "Well—I don't know. That's one thing I've never meddled with. But if anything will bring out both stain and smell, it's Fels-Naptha Soap. Let's try it anyway. I see you have a box. That's right. I always tell everybody to keep plenty on hand."

Never be sure that a thing is ruined until you have tried washing it with Fels-Naptha Soap. If Fels-Naptha in cool or luke warm water doesn't do the work, you might as well throw the article away.

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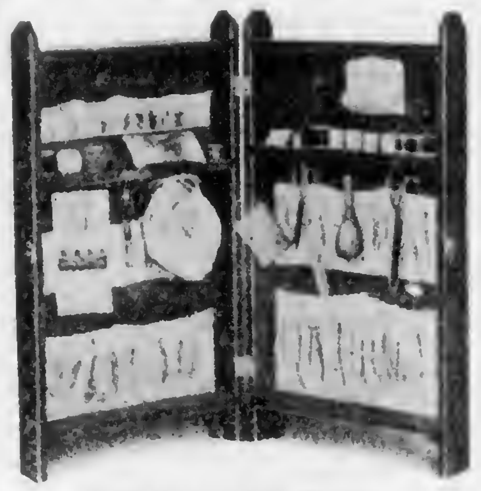
Household

HOME-MADE SEWING SCREEN

Where there is no regular room in the house which can be set apart for sewing, a corner of a hall can sometimes be fitted up with the conveniences needed for satisfactory work. If the man of the house is handy a device which is easily made and which will surely be appreciated by any young housekeeper is a sewing screen, made as shown in the illustration. A convenient size is thirty-six inches high, thirty-six inches wide when open and about five to six inches deep. About nine inches from the top of the frame a strip is placed across each panel which helps to strengthen it and also acts as a very convenient spool shelf. A row of screw hooks on the under side makes places for hanging scissors, or any other sewing tool that can be hung up.



HOME-MADE SEWING SCREEN.

The screen may be made of pine or oak. For the covering of the sides use burlap such as is used in wall decorations. It comes in a variety of colors and is comparatively inexpensive. Finish the edges with upholsterers' tape and brass tacks.

The pockets on the inside of the screen can be made of cretonne, or sateen to match the burlap. These hold unfinished sewing, stockings that need darning, cotton and wool for mending, patterns, materials and all the small accessories of the modern sewing room. Such a screen can be carried upstairs or out on the porch or from room to room in half the time that is ordinarily spent in getting together the sewing materials.

MARYLAND HOMEMAKERS' WEEK

Over 120 Maryland women enjoyed the whole or a part of Homemakers' Week, January 12-17, at their Agricultural College. The subject of "Fibers and Textiles" was effectively presented by Mrs. C. W. Foulk, of Ohio, whose articles on "Facts about Foods" are features of our current issues. The light that she threw on all wool and cotton values, and the real nature of so-called bargains was a revelation to many of her hearers. The simplicity of the tests that she illustrated for determining textile quality made one wonder why more people do not study how to protect themselves better instead of guessing at every purchase and grumbling at the high cost of things. What could be easier to make than the fat test between linen and cotton? Take some samples, rub in a little olive oil. If the cloth remains opaque, you have cotton; if it becomes transparent, it is linen. But possibly you don't care about carrying a bottle of olive oil around with you while shopping. Well, then, use a little tube of vaseline instead. Make the test right at the counter where you buy.

Probably the lantern-slide illustrated evening lecture by Mrs. Foulk on "The Kitchen" was the most fascinating of the series. We followed step by step the changes which bring about happiness and lessened drudgery in the farm home. What a difference a window rightly placed may make. The farm woman may have a pretty view, flowers and trees in sight, and plenty of sunshine, or she may be looking out on a dreary backyard, messy and unkept, as farm yards too often are. She advised us to have the wall paper or the paint light colored, yellow or buff, because dark colors show smoke more and are depressing. Eliminate every dust catcher. Stuff the cracks. Have the wood trimming as plain as possible. Life is too short to be spent wearing out dust cloths. When you need artificial light in the kitchen, have your lamp in a bracket where it will throw the light directly on what you are doing. Don't lean over either the sink, the wash tub or the stove. Have them set high enough to suit you, not as the man who puts them in thinks they ought to be. Two pictures showed the right and wrong position at the sink. Have a clock in the kitchen. Learn to time your cooking. Measure accurately, time your cooking properly, for cooking by instinct and guesswork is sinful in these days of science applied to the homely things of every day. The lantern slides showed very graphically good and poor kitchen arrangement and equipment, cupboards, etc.

"Canning Fruits and Vegetables" was an absorbing topic, for here more than almost anywhere else time and temperature have been worked out with painstaking accuracy. Why the jelly don't jell or the tomatoes don't keep is something the good housekeeper discovers for good and all. Neither does she despise knowing how to use or buy meat to advantage. Mrs. Foulk put her students hard at work by having a butcher cut up the whole side of a steer on a table before them, and then quizzing them as to where each piece belonged.

Associated with Mrs. Foulk during the week was Miss Lena Bumpas, a Texas domestic science teacher, who is working for a degree at Ohio State University, who gave a most satisfactory demonstration of the "Chemistry of Cleaning," and of the "Preparation and Handling of Vegetables for The Table." Cooking cabbage without making so much odor in the house was one of the riddles made plain by the advice to cook it without the lid on, which allows the fumes from the sulphur content of this vegetable to gradually disappear in the air if one has enough ventilation in the kitchen at the time.

Dr. Martha B. Lyon, of Washington, D. C., supplemented the lectures on the making of the home with a series of talks on "Home Nursing," "Care of Babies," "Poisons and Their Treatment," "Bandaging," "Emergency Work, and Artificial Respiration." These lectures, like those of Mrs. Foulk, were so deftly illustrated and the opportunity for questioning and practice so readily given that every woman present had a chance to make sure on any doubtful points before the lecturer proceeded. Nothing like knowing what to do for that reckless boy of yours, whether he has a stone bruise or falls into the ice pond.

Whether they planned meals with Mrs. Foulk or peeked at horrid little bacteria thru Dr. Appleman's microscopes while learning why bread doesn't always rise or why milk will sour or butter won't come, our Maryland homemakers, present and future, thoroly enjoyed their educational vacation. The week—all too short—at their agricultural college has made them hope that soon there will be courses for their girls as well as for their boys at Maryland Agricultural College to train them in the labor to which they shall give their lives. A large degree of the credit for arranging this year's as well as last year's Homemakers' Week Course is due to Mrs. H. J. Patterson, wife of Pres. Patterson of Maryland Agricultural College.

Rubber Hanger.—In the winter season, when there are so many overshoes and gloves to be taken care of, I find the spring clothes pins excellent helps. I fasten a stout cord to each and suspend the pin from hooks on which coats are hung. A pair of overshoes, gloves or caps can be harmlessly nipped by these spring clothes pins, thus keeping them off the floor and in pairs. Longer cords can be used to bring the pins within reach of children.—Mrs. H. B. Walker.

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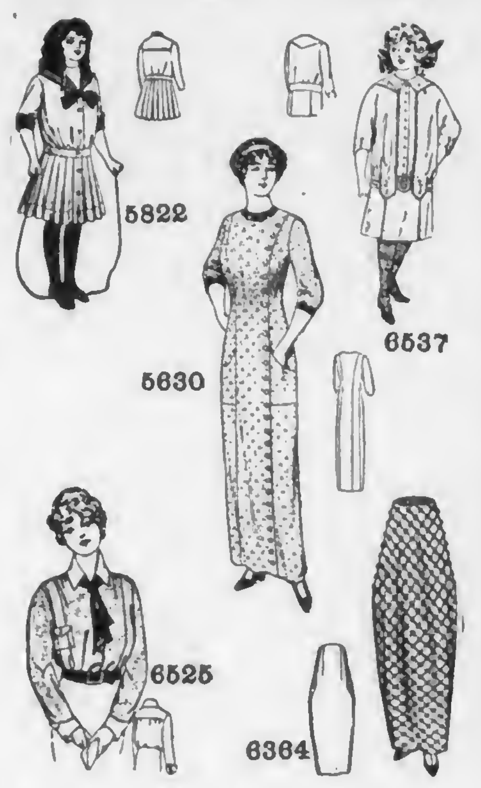

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Entire waist fine quality Jap silk, with stylish long shoulders and round, hemstitched silk collar, silk lined. Seams outlined with corded piping. Sleeves finished with turned-back, hemstitched cuffs. Front corded piping. Eton effect, trimmed with five handsome pearl ball buttons.

You will be positively delighted with this stylish, up-to-date Waist.

Sizes, 32 to 44. Send postpaid upon receipt of check or money order for $1.85. Ask for Waist No. 36N1.

Absolute satisfaction guaranteed or money refunded

Linwood Haines Limited of America
99 Federal Street, Camden, N. J.

FROM COFFEE ROASTER TO YOU

I roast all my own coffee and therefore am able to supply you with good fresh coffee at all times. By buying direct from me you also save money.

Regular 30c Coffee I sell

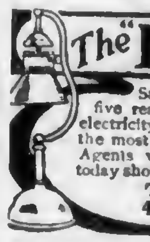
5 Pounds POSTPAID $1.10

Regular 35c Coffee I sell

5 Pounds POSTPAID $1.25

Guaranteed to be satisfactory or your money cheerfully refunded. Coffee sent ground or unground.

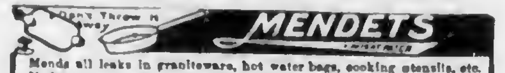
J. W. FEES, Coffee Roaster, 15 N. 2d St. Phila.



The "BEST" LIGHT

Safe, powerful, brilliant, steady and cheap—five reasons why you should replace expensive electricity, unpleasant oil, and wasteful gas with the most efficient of all lights—the "Best" light. Agents wanted everywhere. Write for catalog today showing over 200 different styles.

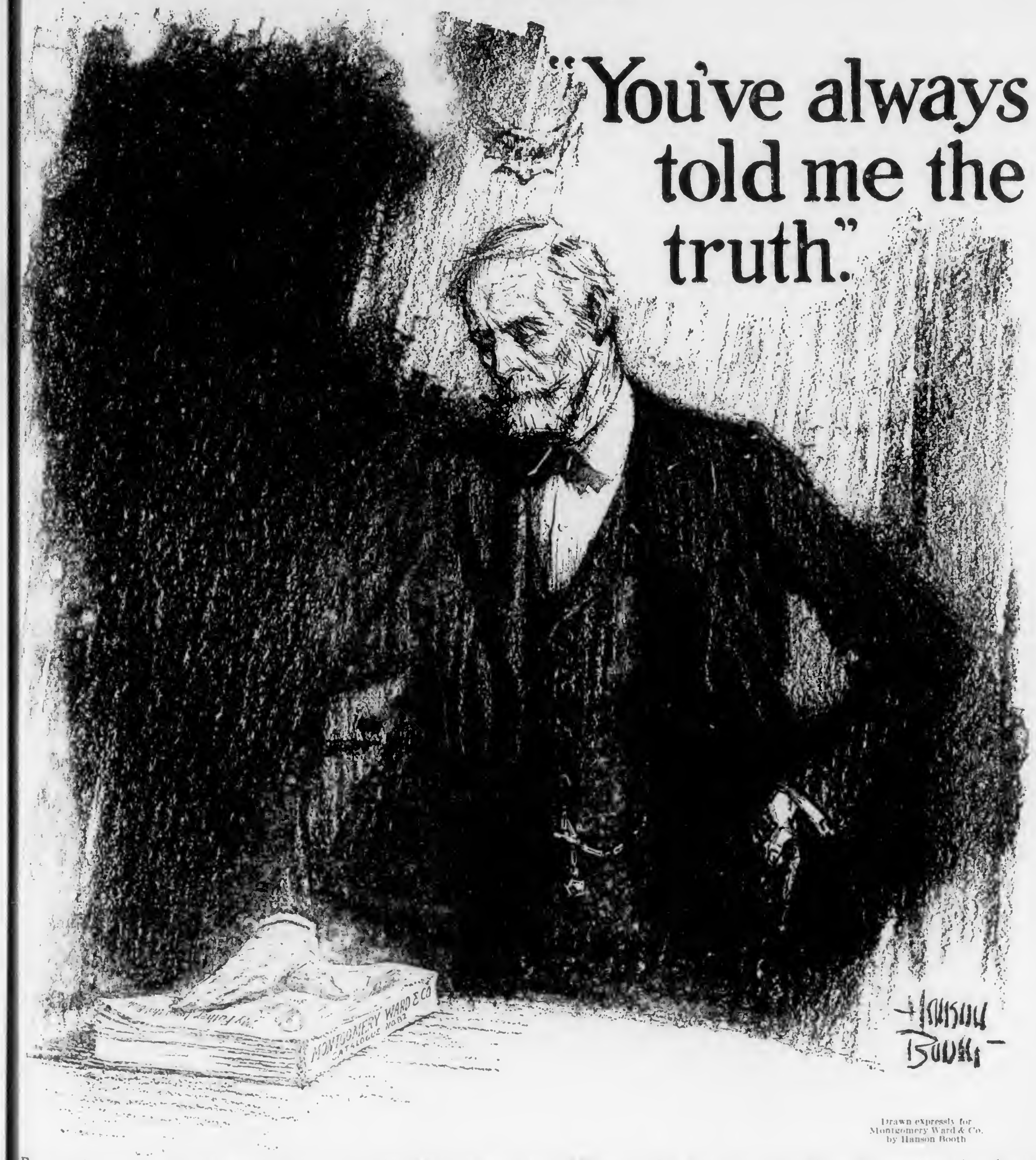
THE BEST LIGHT CO.
461 East 5th St., Canton, O.



MENDETS

Mends all leaks in graniteware, hot water bags, cooking utensils, etc. No heat, solder, cement or rivet. Fit any surface. Sample box, 10c. Complete box, assorted sizes, 25c. Wonderful opportunity for live agents.

PATERSON, Box 4217, Germantown, Pa.



"You've always told me the truth."

Drawn expressly for Montgomery Ward & Co. by Hanson Booth

From the very first word in the first Montgomery Ward & Co. tiny folder down to the last letter in the latest Big Catalogue, customers have been told the *absolute* truth. Not one picture, not one description has been tinted or tainted with exaggeration or deception.

Every article listed in Ward's catalogue is *delivered* just as described—and every description is accurate to the minutest detail.

There's no danger of *self-deception*—you don't depend upon your eyes to find faults or to measure merits. The word of Ward means absolute fidelity and makes full value as certain for the uninformed as for the best posted buyer.

Montgomery Ward & Company's Catalogue is a big volume of value and variety, as well as a book of *truth*. No matter where you live it places right at your finger tips the world's most complete assortment of dependable merchandise. It saves your dollars, not only because it quotes lower prices but because it gives you goods that render longer and more satisfactory service. It enables you to choose almost any necessity or luxury desired by man, woman or child. It's a big fifty acre store—a store with miles upon miles of counters and shelves laden with the best offerings of many nations—a store whose door swings back at your command—where thousands of competent clerks stand ready to serve you, swiftly, silently without argument or suggestion to sway your selections—where every buy is a bargain and every transaction is stamped with satisfaction.

Have this "Big Store" in your home. Give yourself and family the benefits and delights of dealing where every trade is founded on truth—where every promise is promptly fulfilled—where you *save* when you *spend*. Use attached coupon *now*.

Montgomery Ward & Company, Dept. H-41
Send me Free a copy of your new Catalogue. All I agree to do is to look it over.
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R.F.D..........

MONTGOMERY WARD & CO.

NEW YORK CHICAGO KANSAS CITY FORT WORTH PORTLAND

Grange

NEW YORK STATE GRANGE MEETING

The 41st session of the New York State Grange was held in Poughkeepsie on February 3 to 6, and comprised 570 voting delegates. Fully as many others were present as visitors. According to the secretary's report the fully paid up membership in the State at the end of the fiscal year, September 30th, 1913, was 107,986, a gain of 4,321 during the past year. There was membership in arrears on the above date 1,307, making a total actual membership of 109,293. The number of Granges is 838; 32 having been organized the past fiscal year. The financial statement shows receipts for the year, $31,441.49.

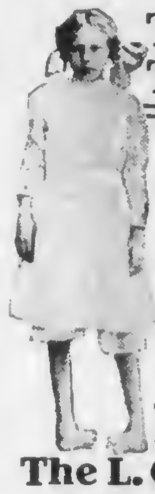
Master's Address.—In his opening address, State Master Vary said that New York continues to lead in membership and contributes about one-twelfth of the total receipts of the National Grange Treasury. Speaking of co-operative efforts by the State Grange, he spoke of grange fire insurance as one of the most successful. One grange company reports a saving to the members during the past twenty year of $668,360, an average annual saving of $33,418. It has been demonsrated over and over again that the farmers are amply competent to conduct the business of fire insurance on co-operative lines. Concerning the State Grange Purchasing Agency, the State Master remarked that the amount of business for the year ending December 31, was $392,000, but this amount, large as it seems, does not average high according to the number of granges in the state. Considerably less than one-half of the granges have taken advantage of the opportunities offered. Over $31,000 worth of seed was purchased, the saving on this item alone amounting to many hundred dollars.

In regard to reforms in our methods of assessment and taxation, Mr. Vary suggested three ways in which the burden of excessive taxation may be materially lessened. First by equal and just assessment and taxation laws, duly enforced, requiring all property to pay its just share. Second, by retiring to private life a large number of useless political office holders. Third, by reducing the salaries of a large number of others to a plane somewhere commensurate with their abilities and duties.

Election.—The biennial election of officers was held. Principal officers are as follows: Master, W. H. Vary, Watertown, N. Y.; Overseer, S. J. Lowell, Fredonia, N. Y.; Lecturer, F. E. Alexander, Pulaski, N. Y.; Treasurer, W. L. Bean, McGraw, N. Y.; Secretary, W. N. Giles, Skaneateles, N. Y.

Roads.—The Committee on Good Roads deplored the application of so much of the highway funds to the construction of trunk lines in the state. The waste and misappropriation of much of these funds was also deplored, and the construction of more market roads was desired.

Legislative Matters.—The committee on legislation reported on a variety of subjects. The following propositions were adopted. Use of traction engines on highways only under certain restrictions. Appropriation of state moneys for new buildings at Geneva Experiment Station. Amending drainage laws so as to secure drainage rights across lands whose owners may be opposed. Amending the Commission Merchants' bill to require such dealers to keep record of sales and to notify shipper of same. Recommending an enactment of Assembly bill No. 61, relative to equipment of railroad trains. Approving the federal prohibition of the manufacture of malt or spirituous liquors. Asking for a county option bill to control the liquor traffic in counties. Asking the public Service Commission for better service on rural telephone lines. Approving a fine of $25 for Sunday hunting. Asking for legislation to preclude brokers in farm lands from demanding a commission on sale, unless they had a written contract with the owner. Asking for the increase of jurors' fees in justices' courts from 25 cents to $2 per day. Approving the censorship of all songs offered for sale in the State. Favoring the extension of time limit for stock in transportation from 24 to 28 hours before unloading. Asking the state to pay all just claims for cattle killed by the state.—D.



These Pictures Tell The Story

Gertrude Snyder, thirteen years old, daughter of Robert Snyder of Natrona, Pa. was born with Club Feet and was brought to this Sanitarium in May, 1911. The position of her feet at that time is shown in left picture, while the position and condition of her feet at the present time, after treatment at this Sanitarium, is shewn in picture on right. Write Mr. Snyder; he will be glad to tell you of his experience.

The correction was made without Chloroform, Ether or any General Anaesthetic. Plaster Paris was not used.

The L. C. McLain Orthopedic Sanitarium

This thoroughly equipped private Sanitarium is devoted exclusively to the treatment of crippled and deformed conditions, such as Club Feet, Infantile Paralysis, Hip Disease, Spinal Diseases and Deformities, Wry Neck, Bow Legs, Knock Knees, etc.

Let us advise you regarding any crippled, paralyzed or deformed child or person in whom you may be interested. It will cost you nothing, and in view of over 30 years' experience our advice should be valuable.

A book entitled Deformities and Paralysis, also a book of references, with testimonials from practically every state in the Union, will be sent, free of charge.

The McLain Orthopedic Sanitarium
905-R Aubert Avenue, St. Louis, Mo.

"LANCASTER"

Potato Graders, 3 sizes—50 to 100 bu. per hour.

Pulleys, friction for separators, plain for shafting; all sizes.

Hay Hoists, double or single drum, with or without brake. Send for circulars.

LANCASTER PULLEY CO. Lancaster Pa.

IRON PIPE PLUMBERS' SUPPLIES PUMPS ROOFING

At Lowest Factory Prices

Also complete Water Systems, Heating Plants, Wall Board, etc. Get our BIG BARGAIN CATALOG, mailed free, and save middlemen's profits—1-3 to 1-2 cost. Goods guaranteed. Write to-day King Co., 115D W. 3d St., Cincinnati, O.

20 Crops of Potatoes
Av. 322 Bush. per Acre

$500 AWARDED

BOWKER PRIZE WINNERS

Northern Zone (Maine, N. H., Vt.)		Yield in Bushels	Complete Score Points including starch, size and cooking quality
$100 1st Prize	A. B. Cobb, Lee, Me.	502.6	690
50 2nd "	O B. Keene, Liberty, Me.	418.6	660
30 3rd "	J. L. Demeritt, Sangerville, Me.	405.5	615
25 4th "	Frank J. Hersey, Dexter, Me.	465.8	607
20 5th "	D. L. Brett, Oxford, Me.	400.	525
15 6th "	W. S. Hodges, Phillips, Me.	311.1	523
10 7th "	R. J. Martin, Rochester, Vt.	331.8	520
Gratuity.	Geo. E. Burditt, Rochester, Vt.	457.8	634
Southern Zone (Mass., R. I., Conn.)			
$100 1st Prize	A. W. Butler, Brockton. Mass.	363.1	589
50 2nd "	Jos. Howland, Taunton, Mass.	344.9	574
30 3rd "	Henry A. Wyman, Rock, Mass.	342.5	558
25 4th "	Edwin L. Lewis, Taunton, Mass.	260.2	515
20 5th "	W. C. Endicott, Danvers, Mass.	217.7	503
15 6th "	Luther Holton, N. Franklin, Ct.	183.8	450
10 7th "	Dudley P. Rogers, Danvers, Mass.	185.7	430

Send us your name for complete and instructive statement concerning the results of the contest and how these great yields of potatoes were obtained. No other fertilizer than the Stockbridge Potato Manure was used.

BOWKER FERTILIZER COMPANY
43 Chatham Street, Boston, Mass.

ALWAYS Mention PENNSYLVANIA FARMER —When Writing to Advertisers.—

Big Introductory Offer

This Fine Hardwood Rocker and This $5 List of Grocery Products

Just to get you acquainted with the high quality of Crofts & Reed Grocery Products and especially our Money Saving Factory-to-Home Plan of buying, we will send you the entire list of Products below and this Beautiful Hardwood Rocker both for only $5. We don't ask you to send the money in advance. Simply fill out and mail the coupon. We will ship both Rocker and Products—then you are to use the goods just as if paid for. Use the Rocker—have your friends try it. Test the Products for quality, quantity and freshness. Take plenty of time—you have full 30 days to find out if this is a bargain or not. You haven't a cent invested—you take no risk whatever. We take goods back—pay all freight charges—make no charge for goods used in the test.

Both for $5 Only

NO MONEY DOWN

Here are the Products You Get For $5 With Chair Included

	Retail Price		Retail Price
1 pkg. B Oats, 1½ lbs.	15	1 pkg. Macaroni, 1 lb.	15
1 Bottle Vanilla Ex., 2 oz.	25	1 pkg. Corn Starch, 1 lb.	10
1 Can Cream Tar. B. Pdr.	25	1 pkg. Salt, 5 lbs.	10
2 Cans Pork and Beans, large size	30	1 pkg. Bak. Soda, 1 lb.	10
1 pkg. Unsweetened Chocolate, ½lb.	35	1 pkg. Black Pepper, Ground, ¼ lb.	10
1 lb. Ceylon Tea	60	3 bars Kero. L'dy Soap.	15
1 pkg. Rice, 2 lbs.	25	2 pkgs. Washing Powder	20
1 pkg. Cocoanut, ½lb.	20	2 pks. Scouring Powder.	20
1 Jar Peanut Btr., ½lb.	20	1 pkg. Gloss Starch, 3 lbs.	25
1 Jar Orange Marmalade, ½lb	20	1 Bx Fragrant Bouquet Toilet Soap (3 bars).	25
1 pkg. Carmel Pudding.	15	10 brs. Fam. L'dy Soap.	50
			$5.00

Better Than Expected
The rocker is much nicer than I expected. My neighbors say the chair alone would cost me $5 at stores. The products also are very good indeed.
Mrs. E. J. Bailey, Alton, Ill.

30 Days' Trial Before You Pay

After you have had the Rocker and Grocery Products 30 days, if you are thoroughly satisfied, you send us only $5.00. If not satisfied, write us and we will take them away, pay all freight charges so you won't be out one cent. We make this remarkable offer to induce you to try our Products and see how you can get hundreds of useful articles in Furniture, Clothing, Silverware, Jewelry, Dishes, Glassware—anything for the home without extra cost.

Send No Money—Just the Coupon

Write your name and address plainly in the coupon below—give two references, your pastor and banker, or a business man—mail it to us. We will ship the $5.00 worth of Products and Rocker immediately. When you get them, if for any reason they are not satisfactory after you have tested them 30 days or before the 30 days are up, you can return them at our expense. You are not obliged to keep them. We leave everything to you.

Description of Rocker

This rocker is made of selected hardwood, is screw fastened in the most approved manner, which any furniture man will tell you is the most satisfactory way of putting a chair of this kind together. Back is artistically shaped, has seven turned spindles joining the top and bottom panel. Front and back posts also are turned. Arms are shaped, strongly fastened to back and seat. The finish of this rocker is equal to that of a chair selling for $5.00 to $10.00. It is finished in the very best American Quartered Oak and the polish is superb. You would pay as much or more at a furniture store as our price of $5.00 for a rocker as good as this one, and you would get no products with it. It is 38 inches high, 24 inches wide and 15 inches from the floor.

FREE!

This Pound Box of Our Famous Chocolate Creams

Given as an extre present if cash accompanies your order. Retail value 70c.

(208)

Crofts & Reed Co., Dept. A273 Chicago, Ill.

If your neighbors wish to take advantage of this offer they may do so by copying this coupon

CROFTS & REED CO. Dept. A273 CHICAGO.

Please send above list of Products and Rocker and if both are satisfactory I will send you $5 in 30 days' time. Otherwise I agree to return unused products with rocker to you. You may refer to those below for references.

My Name .... Town ....
Street Address .... State ....
Reference No. 1 .... Business ....
Reference No. 2 .... Business ....

(If cash is sent with order simply give your name, address and shipping point.)

EEDING CATTLE ON EASTERN FARMS

(Continued from page one)

ding cattle is where corn silage is l. It not only furnishes the feed in more succulent form, but it also rees the cost of making a pound of in. It makes it possible to elimie from the ration the corn during early part of the feeding period. e only grain necessary is the cottond meal and what corn is in the silage. y may be fed in addition to the sil. While the daily gains are not so ge as when grain is fed from the bening, the cost of a pound of gain is terially reduced. This is especially e when the cost of corn and grain ds are high as at the present time.

lany Pennsylvania farmers grind the corn for their fattening cattle. Such ctice is expensive and involves an litional amount of labor which is not overed by additional gains for the l consumed. It is more desirable to tinue feeding broken ear corn until e late in the winter, when shelled n is to be preferred.

attle feeding cannot be successfully ducted when ear or shelled corn ed unless hogs are allowed to follow cattle in the feed lot. There is conerable corn that passes thru the cat undigested and is lost unless hogs present to consume the waste. The e of the pork produced is often the fit to be derived from feeding cattle. s value will vary with the amount of n fed and the length of time they ow the cattle. The additional profit m feeding cattle, due to the pork duced, at the Pennsylvania State Col last year, amounted to about $2.25 steer. It is customary to allow t two hogs for every three steers the cattle are on full feed.

elter is an important consideration. is necessary to build new shelter ould be put up in the form of innsive, open sheds in preference to nsive barns. When expensive barns built the overhead charge for shels high. Another point to be conred is that cattle will do better in sheds than in the warm basement s. If the cattle can be kept out e open most of the time, but prod from the cold winds, sleet and , they have a better appetite and also less subject to disease. In a s of tests on the open shed as comd to warm basement barns at the nsylvania State College, the results in favor of the open shed, six out even years. The following table ng the results for the winter of 1910 1911 is similar to those obtained for years:

	Barn Lot	Open Lot
per cwt. gain .	$11.05	$10.03
gain, lbs ...	2.136	2.362
cost per cwt.	$ 6.63	$ 6.46
value per cwt.	7.60	7.75
l per steer ...	10.69	14.67
rns per bu. corn	0.99	1.108

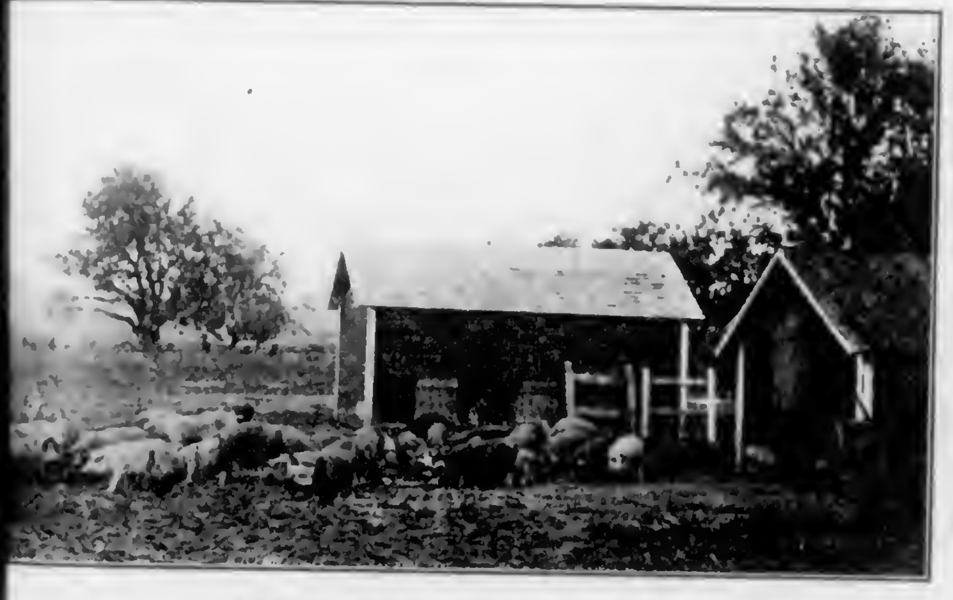
is table indicates that it is poor my to house feeding cattle in warm ment barns. However, if basement her barns are a part of the buildon the farm, it is not necessary to sheds and permit these barns to lle. These can be so arranged that cattle can go in and out at will. ment barns with open doors or sides ected with small yards can be subted for open sheds with entire sattion. Large yearly profits can not xpected from feeding cattle. It however, give good returns for all fed, provide a market for many lable products, keep up the fertility of the soil and result in large crop yields from year to year.

SMALL MOVABLE BUILDINGS

Movable farrowing houses of sundry types are to be found everywhere. Their chief value resides in their handy movability. But movable buildings of larger size are rare.

Soon after having come to the farm a dearth of hog shelter, coupled with the inadvisability of erecting a large permanent house led us to plan the largest building that we thought could be moved with comparative ease. Two of these were put up, 16 feet long, 8 feet wide, and 6 feet high to the plate, with gable roofs of shingles. The frame is of oak thruout, sills being 4 by 4 inches and all other timbers 2 by 4 inches. First-class house siding was used, and the buildings thoroly painted three coats. The cost of these buildings including labor was about $35 each. Since that time we have built two others of same dimensions, except being four feet shorter; one with a shed roof, which we have learned to prefer. This latter house has a matched floor, and is used generally for temporary storage, such as seed and fertilizer in a distant field, cement on site of construction, grain at threshing, hog feed, cooker fuel, etc.

The larger houses are subdivided so as to accommodate three sows at farrowing time, removable gates being used; each building containing three outside doors (small), one of which (in the end) contains a supplemental door above, which when open provides an entrance six feet in height. These buildings are provided with temporary floors in three sections, made of old lumber, and used principally at spring farrowing. At most times the partition gates and floors are not in use. At spring farrowing we usually store straw above the pens in these houses by laying a few loose boards or rails across the gates, which are 40 inches high. When not otherwise in use, these buildings have provided shade for sheep or cows in the pasture, for young chicks, for storage of all kinds. They may be filled with corn for late fall feeding.



A GROUP OF MOVABLE FARM BUILDINGS.

Altho one of these buildings is provided with runners, yet we never use them, for we have found it much easier and less racking on the building to use two flat sleds connected by a chain. Our sleds were made by taking sawed oak fence posts that had rotted off at the ground, for runners. This makes them about four feet long. Each end is mortised an inch on top to admit a 2 by 4 inch cross piece to be spiked on, also four feet. Both ends of the runners are sloped so as to make the sled reversible. We block up the house, place the sleds, move, and get the building down easily in an hour. Sleds facilitate easy turning; reversible sleds provide for making "Y's" where the turn is too short to be made in the usual way.

In moving such buildings at first we used three horses, but now we never use but two. To avoid accidents never hook on the team until all is ready to start. When having arrived at the new site, the first thing to do is to take off the team. We have had these movable buildings all over the farm; we can easily provide farrowing quarters in any field, or shade for hogs in summer, just where it is needed. Five years' use has not seemed to rack the buildings in the least, altho they have been moved more than a dozen times, and often as much as a half a mile. Windows are likely to get broken, so we use none. We have preferred shingle roof on account of being cooler in summer.—G. P. Williams, Delaware Co., O.

It's a Pleasure to Farm in the South

NATURE coöperates with you at every turn in the Southeast. Crop failures are hardly known.

You are favored with 200 to 300 growing days, which allow two and three crops from the same land each season.

Expensive Irrigation is unnecessary, as 45 to 60 inches of rain, well distributed through the growing season, fall annually.

The assortment of crops raised in the Southeast is the greatest anywhere in America. From the tropical citrus fruits to the finest varieties of apples, peaches, pears, grapes and numerous other fruits and nearly every known variety of grains, vegetables, grasses and legumes can be produced somewhere in the Southern Railway territory.

And with all these superior advantages Southeastern land now averages less than one-half the price of farms in other parts of America.

$15 to $50 An Acre Buys Excellent Homesteads

where the climate is exceedingly agreeable and healthful, where railroad communication is of the highest order and transportation to Northern markets but 24 to 48 hours. Life in the rural sections of the South is all that could be desired. Modern highways and telephones, the best of high and agricultural schools, good churches and trading centers—all these advantages are to be had in this growing section.

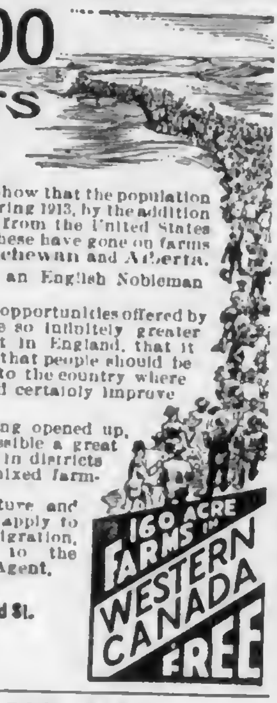
INVESTIGATE SOUTHERN CONDITIONS

Avail yourself of the low Homeseeker's Rates. Write for particulars. Learn of the favorable conditions in the South. Ask for the "Southern Field" magazine, state booklets on Virginia, North or South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky. Let us know the state and line of farming in which you are interested.

M. V. Richards, Land and Ind. Agt. SOUTHERN RAILWAY Room 74 Washington. D. C.

Mobile & Ohio R.R. Southern Ry Ga. So. & Fla Ry.

400,000 Settlers a Year


160 ACRE FARMS IN WESTERN CANADA FREE

Immigration figures show that the population of Canada increased during 1913, by the addition of 400,000 new settlers from the United States and Europe. Most of these have gone on farms to Manitoba, Saskatchewan and Alberta.

Lord William Percy, an English Nobleman says:

"The possibilities and opportunities offered by the Canadian West are so infinitely greater than those which exist in England, that it seems absurd to think that people should be impeded from coming to the country where they can most easily and certainly improve their position."

New districts are being opened up, which will make accessible a great number of homesteads in districts especially adapted to mixed farming and grain raising.

For illustrated literature and reduced railway rates, apply to Superintendent of Immigration, Ottawa, Canada, or to the Canadian Government Agent.

F. A. Harrison, 210 N. Third St. Harrisburg, Pa.

FARMS FOR SALE.

Virginia Farms and Timber Lands
Improved and unimproved. $5.00 an acre and up. Rich lands, heavy crops, healthy climate, happy farmers. Colonial homes. Catalog free. B T Watkins & Co., 28 North Ninth St., Richmond, Va.

FARM FOR SALE
37 1-20 Acres. Suitable for dairy or truck. Near Cochranville. Four miles from Parkersburg. Good buildings. Stable room for 18 head of stock. Price $3700. B. H. Davis, R. 4, Cochranville, Ches. Co., Pa.

Fertile Farms and unimproved lands in Delaware diversified farming, live stock, delicious fruit and ideal homes. For information, address STATE BOARD OF AGRICULTURE, Dover, Delaware.

Farm Bargains near Philadelphia; fruit, poultry, truck, dairy, mild climate, excellent markets Catalog. W. M. Stevens, Perkasie, Pa.

FARMS ALL SIZES ALL PURPOSES LIST FREE
A. W. DRESSER, BURLINGTON, N. J.

"PURE SUGAR CANE" FEEDING MOLASSES
1 to 4 Barrels, per gallon, 10 cents
5 to 10 Barrels, per gallon, 9 1-2 cents
Barrels contain about 58 gallons.
TERMS:—F. O.B Philadelphia. Cash with order.
W. E. WOODWARD CO.
252 N. Water St., PHILADELPHIA
Official Grange Grocery House

PURE FEEDING MOLASSES
We are first hands and can quote you absolutely bottom prices, delivered your station, in lots of anywhere from one barrel to a trainload
THE MEADER-ATLAS CO.
N. Y. Office, 107 Hudson St., New York City.

The School of Veterinary Medicine At The University of Pennsylvania
trains students in all lines of veterinary work. Facilities unexcelled. For catalog, address, Louis A. Klein, Dean, Dept. F., 39th St. & Woodland Ave., Phila., Pa.

SWINE.

If you want the best hog
Write us. Our farms are devoted exclusively to the production of Berkshires. Breeders in the following States have been supplied from our great herd: N. Y., Penna.; Dist. Col.; Md.; Va.; N. C.; S. C.; Ga.; La.; Ala.; Miss.; Fla.; Tenn.; Ky.; Texas, and Porto Rico.
Berkshires for foundation and show purposes a specialty.
THE BLUE RIDGE BERKSHIRE FARMS, Asheville, N.C.

BERKSHIRES
We offer good ones at reasonable prices.
T. J. Kerr. Collins, N. Y.

Berkshires A typ y lot of fall pigs, bred along the most popular blood lines.
JNO. C. BREAM. R. 4. Gettysburg Penna.

LARGE BERKSHIRES—25 sows and gilts bred for March and April, 2 young service boars, 30 fall pigs. F. B. GOARD, Jeromeville, Ohio.

Large Berkshire Swine, Registered High grade. Prices reasonable. Write, HOME FARM. Center Valley, Pa.

Registered Hampshire Pigs, Choice Boars and Gilts. Write for prices. White Belt Farms Plainville, N. Y.

CHESTER WHITES OR O. I. C.'s
Now is the time to order Spring Pigs from large, growthy, prolific sows. A few Fall boar pigs left, also ten December pigs All stock registered, either OIC or Chester White Record. Victor Farms, Bellvale, N. Y.

Registered Chester White Pigs and Jersey Bull Calves FOR SALE, J. A. BOAK, R. D. 4. New Castle, Pa.

O. I. C.'S—Bred gilts all sold. Summer and Fall boars weighing 100-160 lbs. One of Michigan's best herds. Geo P. Andrews, Dansville, Mich.

Registered Poland Chinas.
Grand lot of young sows bred to Jay Centinel for March and April litters; service boars; forty head of choice fall pigs, immuned against Cholera.
C. S. EPPLEY, Zanesville, Ohio

Reg. Big Type Poland China bred yearling and spring gilts. April boars and fall gilts and boars sired by Jumbo Wonder 188375 and Half-ton 56415, for sale by Jay Milum & Son, R F. D. No. 1 Sycamore, O.

Poland China herd that pays. 4 old sows farrowed 54 pigs. Boar and sow pigs for sale. Chas. F. Coleman & Son, R. 1, Trenton, Butler Co., O.

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXII (concluded)

"Fate, or my own folly, has put it out of my power to denounce you without abandoning what I have set my heart upon, and after all it is not my business," he said. "I will give you five hundred dollars and you can go to Chicago or Montreal, and consult a specialist. If the money is exhausted before I send for you, I will pay your hotel bills, but every dollar will be deducted when we come to the reckoning."

Courthorne laughed a little. "You had better make it seven fifty. Five hundred dollars will not go very far with me."

"Then you will have to husband them," said Winston dryly. "I am paying you at a rate agreed upon for the use of your land and small bank balance handed me, and want all of it. The rent is a fair one in face of the fact that a good deal of the farm consisted of virgin prairie, which can be had from the Government for nothing."

He said nothing further, and soon after he went out Courthorne went to sleep, but Winston sat by an open window with a burned-out cigar in his hand staring at the prairie while the night wore thru, until he rose with a shiver in the chill of early morning to commence his task again.

A few days later he saw Courthorne safely into a sleeping car with a ticket for Chicago in his pocket, and felt that a load had been lifted off his shoulders when the train rolled out of the little prairie station. Another week had passed when, riding home one evening, he stopped at the Grange, and as it happened found Maud Barrington alone. She received him without any visible restraint, but he realized that all that had passed at their last meeting was to be tacitly ignored.

"Has your visitor recovered yet?" she asked.

"So far as to leave my place and I was not anxious to keep him," said Winston, with a little laugh. "I am sorry he disturbed you."

Maud Barrington seemed thoughtful. "I scarcely think the man was to blame."

"No?" said Winston.

The girl looked at him curiously, and shook her head. "No," she said. "I heard my uncle's explanation, but it was not convincing. I saw the man's face."

It was several seconds before Winston answered, and then he took the bold course.

"Well?" he said.

Maud Barrington made a curious little gesture. "I knew I had seen it before at the bridge, but that was not all. It was vaguely familiar, and I felt I ought to know it. It reminded me of somebody."

"Of me?" and Winston laughed.

"No. There was a resemblance, but it was very superficial. That man's face had little in common with yours."

"These faint likenesses are not unusual," said Winston, and once more Maud Barrington looked at him steadily.

"No," she said, "of course not. Well, we will conclude that my fancies ran away with me, and be practical. What is wheat doing just now?"

"Rising still," said Winston, and regretted the alacrity with which he had seized the opportunity of changing the topic when he saw that it had not escaped the notice of his companion. "You and I and a few others will be rich this year."

"Yes, but I am afraid some of the rest will find it has only further anxieties for them."

"I fancy," said Winston, "you are thinking of one."

Maud Barrington nodded. "Yes. I am sorry for him."

"Then it would please you if I tried to straighten out things for him? It would be difficult, but I believe it could be accomplished."

Maud Barrington's eyes were grateful, but there was something that Winston could not fathom behind her smile.

"If you undertook it. One could almost believe you had the wonderful lamp," she said.

Winston smiled somewhat dryly. "Then all its virtues will be tested tonight, and I had better make a commencement while I have the courage. Colonel Barrington is in?"

Maud Barrington went with him to the door, and then laid her hand a moment on his arm. "Lance," she said, with a little tremor in her voice, "if there was a time when our distrust hurt you, it has recoiled upon our heads. You have returned it with a splendid generosity."

Winston could not trust himself to answer, but walked straight to Barrington's room, and finding the door open went quietly in. The head of the Silverdale settlement was sitting at a littered table in front of a shaded lamp, and the light that fell upon it showed the care in his face. It grew a trifle grimmer when he saw the younger man.

"Will you sit down?" he said. "I have been looking for a visit from you for some little time. It would have been more fitting had you made it earlier."

Winston nodded as he took a chair. "I fancy I understand you, but I have nothing that you could expect to hear to tell you, sir."

"That," said Barrington, "is unfortunate. Now, it is not my business to pose as a censor of the conduct of any man here, except when it effects the community, but their friends have sent out a good many young English lads, some of whom have not been too discreet in the old country, to me. They did not do so solely that I might teach them farming. A charge of that kind is no light responsibility, and I look for assistance from the men who have almost as large a stake as I have in the prosperity of Silverdale."

"Have you ever seen me do anything you could consider prejudicial to it?" asked Winston.

"I have not," said Colonel Barrington.

"And it was by her own wish Miss Barrington, who, I fancy, is seldom mistaken, asked me to the Grange?"

"It is a good plea," said Barrington. "I cannot question anything my sister does."

"Then we will let it pass, tho I am afraid you will consider what I am going to ask a further presumption. You have forward wheat to deliver, and find it difficult to obtain it?"

Barrington's smile was somewhat grim. "In both cases you have surmised correctly."

Winston nodded. "Still, it is not mere inquisitiveness, sir. I fancy I am the only man at Silverdale who can understand your difficulties, and what is more to the point, suggest a means of obviating them. You still expect to buy at lower prices before the time to make delivery comes?"

Again the care crept into Barrington's face, and he sat silent for almost a minute. Then he said, very slowly, "I feel that I should resent the question, but I will answer. It is what I hope to do."

"Well," said Winston, "I am afraid you will find prices higher still. There is very little wheat in Minnesota this year, and what there was in Dakota was cut down by hail. Millers in St. Paul and Minneapolis are anxious already, and there is talk of a big corner in Chicago. Nobody is offering grain, while you know what land lies fallow in Manitoba, and the activity of their brokers shows the fears of Winnipeg millers with contracts on hand. This is not my opinion alone. I can convince you from the papers and market reports I see before you."

Barrington could not controvert the unpleasant truth he was still endeavoring to shut his eyes to. "The demand from the East may slacken," he said.

Winston shook his head. "Russia can give them nothing. There was a failure in the Indian monsoon, and South American crops were small. Now, I am going to take a further liberty. How much are you short?"

Barrington was never sure why he told him, but he was hard pressed then, and there was a quiet forcefulness about the younger man that had its effect on him.

"That," he said, holding out a document, "is the one contract I have not covered."

Winston glanced at it. "The quantity is small. Still, money is very scarce and bank interest almost extortionate just now."

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Barrington flushed a trifle, and there was anger in his face. He knew the fact that his loss on this sale should cause him anxiety was significant, and that Winston had surmised the condition of his finances tolerably correctly.

"Have you not gone quite far enough?" he said.

Winston nodded. "I fancy I need ask no more, sir. You can scarcely buy the wheat, and the banks will advance nothing further on what you have to offer at Silverdale. It would be perilous to put yourself in the hands of a mortgage broker."

Barrington stood up very grim and straight, and there were not many men at Silverdale who would have met his gaze.

"Your content is a little too apparent, but I can still resent an impertinence," he said. "Are my affairs your business?"

"Sit down, sir," said Winston. "I fancy they are, and had it not been necessary, I would not have ventured so far. You have done much for Silverdale, and it has cost you a good deal, while it seems to me that every man here has a duty to the head of the settlement. I am, however, not going to urge that point, but have, as you know, a propensity for taking risks. I can't help it. It was probably born in me. Now, I will take that contract up for you."

Barrington gazed at him in bewildered astonishment. "But you would lose on it heavily. How could you overcome a difficulty that is too great for me?"

"Well," said Winston, with a little smile, "it seems I have some ability in dealing with these affairs."

Barrington did not answer for a while, and when he spoke it was slowly. "You have a wonderful capacity for any one to believe in you."

"That is not the point," said Winston. "If you will let me have the contract, or, and it comes to the same thing, buy the wheat it calls for, and if advisable sell as much again, exactly as I tell you, at my risk and expense, I shall get what I want out of it. My affairs are a trifle complicated and it would take some little time to make you understand how this would suit me. In the meanwhile you can give me a mere I O U for the difference between what you sold at, and the price today, to be paid without interest and whenever it suits you. It isn't very formal, but you will have to trust me."

Barrington moved twice up and down the room before he turned to the younger man. "Lance," he said, "when you first came here, any deal of this kind between us would have been out of the question. Now, it is only due to tell you that I have been wrong from the beginning, and you have a good deal to forgive."

"I think we need not go into that," said Winston, with a little smile. "This is a business deal, and if it hadn't suited me I would not have made it."

He went out in another few minutes with a little strip of paper, and just before he left the Grange placed it in Maud Barrington's hands.

"You will not ask any questions, but if ever Colonel Barrington is not kind to you, you can show him that," he said.

He had gone in another moment, but the girl, comprehending dimly what he had done, stood still, staring at the paper with a warmth in her cheeks and a mistiness in her eyes.

(To be continued.)

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Most anybody can be an editor, says the Boston Globe. All an editor has to do is to sit at his desk six days in the week, four weeks in the month, and twelve months in the year, and "edit" stuff as this:

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"A mischievous lad of Bungtown threw a stone and struck a companion in the alley last Tuesday."

"Joe Doe climbed on the roof of the house, last week, looking for a leak, and fell, striking himself on the back porch."

"While Harold Green was escorting Miss Violet Wise from a church social, last Saturday night, a savage dog attacked them and bit Mr. Green on the public square."

"Isaiah Trimmer, of Lebanon, was playing with a cat, Friday, when it scratched him on the veranda."

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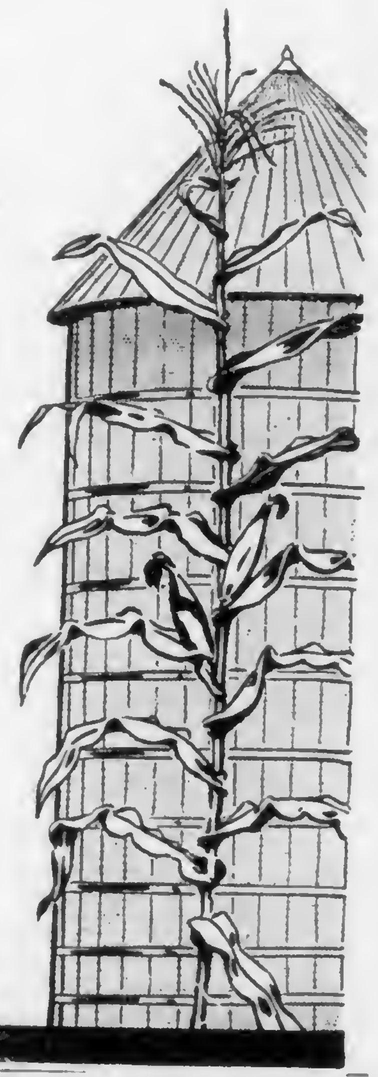

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 16, 1914.

Receipts of fancy print butter well cleaned up at top prices. Eggs were firm due to an expected falling off of receipts on account of present stormy weather. The demand was sufficient to absorb the limited receipts of fancy poultry stock. Fruits and vegetables show moderate offerings and firm prices.

Butter.—Western creamery, 31c; extras, 29c; firsts to seconds 25@27½c; special prints 35@38c; near-by prints, 32c.

Eggs.—Candled, 32@34c doz; extras, 30c. Current receipts at $8.10 per standard case.

Poultry.—Fowls, 19@20c; old roosters, 12@13c; pigeons, 25@30c pair.

Dressed Poultry.—Western fowls, 12@18c; roosters, 14½c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 70@85c bu. Onions, $2.75@3 per 100-lb bag. Peppers $2@2.25 per carrier. Eggplant $2.50@4.00 per crate. Lettuce $1@2.50 hamper. Beets, new 5@8c bch. Sweet potatoes, 40@55c bas. String beans, $2.00@3.50 hamper. Squash, $1.50@2.00 box. Cucumbers, Florida $4@6 hamper. Celery, 50@65c per doz. stalks. Cabbage, new $1.50@$2 ½-bbl crate, Cauliflower, $1.50@1.75 hamper.

Fruit.—Apples $3.50@6 bbl. Pineapples, per crate, $2.50@3.50. Pears, 50@75c bas. Grapes $4@7 keg; cranberries, $2.50@3.50 crate; lemons, $2.50@4 per box; grape fruit $2@4 per box; oranges, $2@3 per box.

Hay and Grain.—No. 3 hay, large bales, $17.50@18.00; No. 1 medium, $17@17.50; no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.00@16.50. Straw No. 1 new straight rye, $16.50; No. 2 do., $15@15.50; No. 1 tangled rye straw new $12; No. 2 do., $11.00@11.50; No. 1 wheat straw, $9.50@10.00; No. 1 oat straw, $10.50@11.00; new shelled corn No. 2 yellow, 71½@72½c. Wheat, No. 2 red, 98@98½c No. 1 Northern, $1.03@1.04; No. 2 white oats, 45@45½c; No. 3, white, 45@45½c. Standard white, 44½@45c.

Coffee.—Rio 7s 9½c; Santos 4s 12⅛c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.10 cwt.; cubes, $4.35; powdered, $4.20; granulated, $4.10; standard granulated, $4.15; crystal A, $4.10.

Flour.—For 196 lbs. in wood, winter clear, $3.75@4.00; do straight, $4.20@4.40; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17¾c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos 5 to 12 and up, $1.55@2.75; do green, 14@15c.

Provisions.—City beef, in sets, smoked and air dried, 32@32½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13½@14½c; skinned, 14@14½c; smoked, 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 12@13c; do. smoked, 12@13c. Bellies in pickle, 13¼@13¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 12@12¼c tcs; do in tubs, 12¼@12¾c; do kettle rendered, 12@12¼c. Tallow, prime city, 7c; country, 7c; do dark, 6c; do. cakes, 7¼c.

BALTIMORE PRODUCE

Baltimore, Md., Feb. 16, 1914

In the Baltimore wholesale market butter was steady. Eggs were firmer at 28c. Poultry steady.

Butter.—Creamery, fancy, 28@28½c; do. choice, 26@27c; prints 29@30c; blocks 28@29c; Maryland and Penna. rolls, 19@20c. Process, 24@25c.

Eggs.—Near-by firsts, 28c; western, 28c; southern, 27c.

Live Poultry.—Hens, 18c; chickens, 18c; old roosters, 11c; ducks, 18@19c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 18@21c; old roosters, 10@11c; ducks, 18@20c.

Vegetables.—Potatoes, Maryland and Penna. 70@75c bu; Beets, 5@7c bch. Beans green $3.50@4 per basket. Celery, $1.75@2.25 crate. Cucumbers, $4.00@5.00 bas. Lettuce $1@$2 bas. Tomatoes, $2.50@3.25 carrier. Onions $1.25@1.40 bu. Eggplant $3.00@3.50 crate. Spinach $1.75@1.90 bbl. Squash $1.50@2 crt. Cauliflower, $1.50@2 crt. Cabbage, $25@28 ton.

Fruits.—Apples, $3.50@5.00 bbl. Cranberries, $11@14 bbl. Grapefruit $2.50@3.75 box.

Mill Feed.—Spring bran $27.00. Middlings, flour to white, $27.00@29.00; western middlings, $26.50@27; city mills, mid., $26.50@27.00.

Grain.—Wheat, No. 2, red western, 99¾c; Spot, 98¾c; corn yellow shelled, 71c; Oats standard, white, 44@44¼c; No. 3 white 45@45½c. Rye, 60@68c.

Hay and Straw.—Timothy No. 1, $17.50@18; No. 2 timothy $16@16.50; do. No. 3, $14.00@15.00. No. 1, clover, $14@15; No. 2, do., $12.50@14; No. 1, tangled rye straw, $11.50@12; No. 1 oat straw, $9.50@10.50; No. 1 wheat straw, $7.50@8.00.

NEW YORK PRODUCE

New York City, Feb. 16, 1914.

With a short supply butter values are higher. Owing to the recent stormy weather egg prices are rather irregular altho there is a fairly well established advance. There is little demand for poultry, and receipts are rather light. Cold weather conditions have made uncertain values in fruits and vegetables.

Eggs.—State and near-by hennery whites fine to fancy, 39@40c; gathered whites, 39c; fair to good 37@38c; no grades, 34@36c; fresh gathered, firsts to extras, 30@31c; seconds to thirds, 26@29½c; no grades 20@23c; mixed 30@31c.

Butter.—Creamery, firsts to extras, 28@32c; thirds to seconds, 21½@27c; state dairy 20@22c; packing stock 16@19½c; process 20@23c.

Cheese.—Whole milk specials, 18@18½c do. common to fancy, 14½@17¾c; skims 5@14¼c.

Dressed Poultry.—Turkeys, dry, 23@25c; chickens, 14@25c fowls, 12@18½c; old roosters, 13½c; ducks 10@16c.

Live Poultry.—Prices not settled.

Vegetables.—Cabbage, $22.00@26.00 ton. Green beans, $1.50@4.50 bas. Carrots $1.75@2 bag. Cucumbers, $1@$2 doz. Lettuce 50c@$4 basket. Squash, $2.25@3 bbl. Celery, $1.50@4.00 per stan. case. Onions $2.75@3 100-lb bag. Tomatoes, $1.00@4.00 carrier. Peppers $2@2.75 per carrier Beets, $3@5 per 100 bunches. Potatoes, $1.75@5.50 bbl. Sweet potatoes, $1.50@2.00 bbl. Eggplants, $2.50@3.50 box. Cauliflower $1.00@1.75 bas.

Fruit.—Apples, $2.00@6.00 bbl. Cranberries $9@13.50 bbl. Pears, $2@3.75 bbl.

Grain.—Wheat No. 2, red $1.02; No. 1, Northern, $1.04¾; corn, new No. 3 yellow, 69¾c; oats, standard white 45@45½c.

PHILADELPHIA LIVE STOCK

Beef Cattle.—The market shows a better tone and choice steers brought good prices. Lancaster, Pa., and Ohio cattle were principally in evidence. The better class of cows as well as the most desirable calves closed a fraction firmer.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,934	8,358	4,948
Previous week	2,575	8,291	5,839

Best Steers	$8.80@9.00
Choice steers	8.60@8.75
Good	8.40@8.50
Medium steers	8.00@8.25
Common steers	7.50@7.75
Bulls	5.25@6.85
Fat Cows	6.20@7.00
Medium cows	4.75@5.75
Thin cows	3.00@4.50
Milk cows	45.00@75.00

Veal calves steady to firm.

Best calves	$11.50@12.25
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	5.00@8.00

Sheep and Lambs.—There was a fair disposal of stock with the best lambs a trifle easier.

Choice wethers	5.75@6.00
Good do.	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	5.00@5.50
Extra lambs	8.25@8.50
Good to choice, do.	8.00@8.25
Common to medium	5.50@8.00

Hogs.—The market closed firm at the prices with a good absorption of arrivals. Western, as to size and quality $12.50@12.75.

City Dressed Stock.—Every kind of choice and prime meat commanded full values, with trade normal. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 16, 1914

Cattle.—With only a supply of 75 loads compared with 100 loads the previous week and a good demand the market ruled 10 to 25 cents per cwt. higher. The light and medium grades sold at the most of the advance. Several buyers for weighty cattle were in the market and the good weight cattle sold from $8.90 to $9.15. The quality of the cattle on sale this week was better than last week. Heifers, fat cows and bulls were in demand and sold at about the same advance as steers. Fresh cows and springers slow and lower. With 125 loads on sale this morning, the demand was moderate, and the market slow and lower on all grades.

Good to choice	$8.90@9.00
Good 1,300-1,400 lb	8.30@8.70
Medium to good 1,200 1,300 lb.	8.10@8.35
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900 1,100 lb	7.60@8.00
Rough, half fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700 900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.00@6.50
Heifers	5.50@7.75
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves.—Receipts of calves fair and with good demand market closed 50 cents higher than Monday's prices. With 400 head on sale, today's calf market was steady.

Heavy and thin calves	$5.50@8.00
Veal calves	8.50@12.00

Sheep and Lambs.—The supply of sheep and lambs has been fair; with a good demand sheep ruled steady to strong, while the demand for lambs has not been so good and the close for the week was 15c per cwt. below Monday's prices. The demand for sheep today was only fair, tho the market was steady. Lambs were lower.

Prime wethers	$6.10@6.25
Good mixed	5.40@5.65
Fair mixed ewes and wethers	4.25@5.00
Culls to common	3.00@3.50
Spring lambs	5.50@8.00

Hogs. — The supply of hogs has been liberal; the market ruled steady during the early part of the week but the close for the week was 10 cents lower on all grades. Today's hog market was steady with 55 double-deck loads on sale

Prime heavy	$9.10@
Prime medium weights	9.10@
Heavy mixed	9.15@
Best heavy Yorkers	9.15@
Light Yorkers	9.15@
Pigs	9.00@9.05
Common to good roughs	7.75@8.35
Stags	6.75@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 16, 1914

Cattle.—The cold weather and the active opening of the week restricted receipts and put the market in good condition on choice butcher grades. On the close the basis was unchanged. The supply was light and the market firm at the week's opening figures. Today's receipts were fairly liberal, totaling 3,750 head. The market was active and stronger.

Choice heavy steers	$9.00@9.25
Medium	8.25@8.75
Yearlings	8.00@8.50
Handy butchers	7.50@8.50
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.50@8.00
Butcher bulls	6.00@7.50
Feeders	6.25@7.00
Stockers	5.00@6.25
Cows and springers	35.00@85.00

Calves.—The trade was fair during the week with moderate receipts. The opening basis was $11@12 for choice veals. On the close the supply was light, the demand good and the market 50@75c higher. All grades were firm and the basis $12.50@13 on choice. With 800 head on sale, today's market was steady.

Choice veals	$12.50@13.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The trade opened fair considering the liberal receipts and the demand was generally good for choice lambs; yearlings were scarce and sold higher during the week. The basis was $6@7.35. On the close the market was steady with liberal offerings. The best lambs brought $7.75@8. Yearlings were in fair demand and easy—the best brought $6.75@7. Choice handy sheep were firm. Wethers firm at $6@6.25. Today's run of 20,000 head was heavy but the market was generally steady to 25c higher.

Choice lambs	$8.00@8.25
Yearlings	7.00@7.25
Wethers	6.25@6.40
Ewes	5.75@6.00
Sheep	6.00@6.25

Hogs.—The active opening of the week put the market in fair shape, owing principally to the cold weather. York weights were firm and heavies were firm and higher. On the close the demand was light and the market 20@30c lower. City and country buyers took but a moderate number. Common grades were slow and lower. The basis on Yorkers was $9.05@9.10. Receipts this morning numbered 20,000 head. The market was steady to higher.

Heavies	$9.00@9.15
Mixed and medium	9.15@9.20
Yorkers	9.15@9.20
Light Yorkers	9.15@9.20
Pigs	9.15@9.20
Roughs	8.00@8.25
Stags	6.50@7.50

Horses.—The supply was fair, 600 head. Fair demand for choice heavy work teams. Best young, well matched, heavy teams, $650@700; medium, $500@600.—S.

NEW YORK MILK MARKET

The condition in the milk market was complicated last week by the heavy snow storm. Delayed trains on Sunday and Monday caused a shortage on the latter day of more than 5,000 cans. The farmers in some cases could not get their milk thru the drifts to the railroads and some of the roads, the New York Central Lines in particular, had great difficulty in moving their trains. Some of the big companies, the Borden and the Sheffield Farms in particular, were unable to supply all their customers and there was a shortage of certified milk for the babies. The February demand is normal, but the supply far exceeds it. It is expected that delinquents in the pasteurization of their supplies will soon find at the hands of the Board of Health how unsatisfactory it is to fail to take time by the forelock. Receipts of milk and cream in 40-qt. cans for the week ending February 14, were as follows:

Railroad	Milk	Cream
Erie	43,298	1,757
Susquehanna	9,475	546
West Shore	15,750	712
Lackawanna	51,675	1,290
N. Y. Central (long haul)	78,003	1,274
N. Y. Central (short haul)	11,570	86
Ontario	41,905	3,138
Lehigh Valley	36,984	886
Homer Ramsdell Line	3,350	25
New Haven	8,690	112
Pennsylvania	2,450	350
Other sources	1,655	14
Total	304,805	10,190

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 16, 1914.

Cattle.—Receipts for the week, 1,494 head against 2,108 last week.

Steers	$6.25@8.35
Heifers	5.50@7.25
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh Cows	35.00@88.00

Sheep and lamb receipts for the week were 2,196 head against 4,470 last week. Fair supply; market steady.

Sheep	$3.50@6.25
Lambs	5.75@8.45

Hog receipts for the week were 14,930 head against 15,549 last week.

Light Western	$9.50@9.55
Heavy to medium	9.35@9.40
Near by	9.25@9.40
Pigs	9.00@9.25

Calves.—Receipts for the week were 308 head, against 219 head last week. Fair supply, market higher at $6.50@11.50.

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 16, 1914.

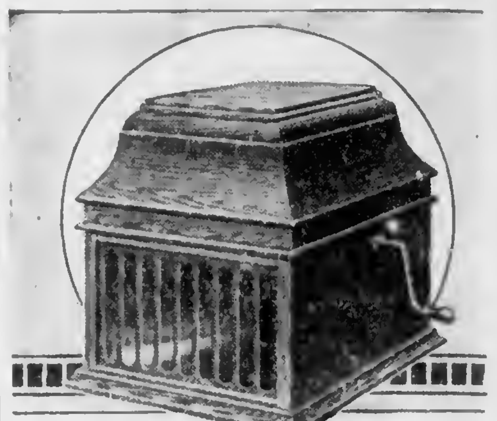
The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 30c.

TOBACCO MARKET

The sale of the new crop continued in a very limited way, several of the larger concerns having withdrawn their buyers and local packers waiting for lower prices. With the present improved conditions these packers may not realize their hopes. Some communities sold a part of their crop as follows: Manor Township 300 acres at $8@9; Leacock township one-third of crop at $8@9.50; West Lampeter, one-half of crop at $8.50@10, Rohrerstown, small sales at $9@10; Conestoga, one-half of crop at $8@10.50; Gap, large sales at $8@9 per cwt. At East Lampeter not much is sold and the same is true at Quarryville, Paradise and Ephrata.

The tobacco and corn show held under the direction of the Lancaster County Tobacco Growers' Association was a great success. The entries in all classes were numerous and worthy. Following are prize winners: Broad leaf filler—First, Geo. Hibshman; second, J. A. Herr; third, H. K. Landis. Broadleaf binder—First, L. H. Gochenauer; second, J. J. High; third, C. Mellinger. Broadleaf wrapper—First, Wayne Hartman; second, L. H. Gochenauer; third, J. S. Reynolds. Havana wrapper—First, M. H. Good; second, A. S. Shaubach; third, M. H. Good. An interesting feature of the show was an exhibit of some fifty samples of tobacco grown in various parts of the country from Wisconsin to Florida. Owing to the success of the exhibit it was proposed to hold a state wide tobacco show at some future time.

An enthusiastic meeting of the tobacco organization was held during the show. This meeting was attended by some 200 growers many of whom were not memebers but simply attending the exhibit. It was announced that the findings of the joint committee of this and the local dealers' association relative to the best methods of tobacco culture would be published soon. A matter of far greater interest, however, was the presence of Mr. Kimbrough, the organizer, and the presentation of some of his plans to aid the grower. He said that farmers must organize and suggested his plan of establishing warehouses and appointing sales agents. He outlined the organization methods of the burley section of Kentucky and Ohio and stated that growers there received $15 to $18 per cwt. for tobacco that, had they not been organized, would have sold at $6 per cwt. He said that, in time, the Seed Leaf Tobacco Growers' Company will be organized and launched after which he will, if desired, cease further activities.—H. E. Tweed, Feb. 16, 1914.



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Veterinary

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Worms—Thick Urine.—I have a five year-old horse that shows symptoms of worms. His urine is thick and yellow in color. E. F., Pittsfield, Pa.—Mix together equal parts by weight powdered sulphate iron, powdered nitrate of potash, ground gentian, fenugreek and cooking soda. Give him a tablespoonful at a dose in feed, 3 times a day for 30 days.

Diabetes.—I have a horse that is about 10 years old. His kidneys are not right and for the past two months I have been treating him, giving him remedies prescribed by my neighbors. He does not improve. His urine is nearly white, having much the appearance of lime water. H. C. W., Elmer, N. J.—Give him 2 dr. potassium iodide at a dose in feed 3 times a day for a week; then give a teaspoonful of powdered nitrate of potash and a tablespoonful of powdered rosin at a dose, 2 or 3 times a day for a week. Then give the medicine as often as you believe it necessary to keep the kidneys active. A change of feed and regular daily exercise would doubtless have a good effect.

Flat Fore Feet.—I have a 10-year-old mare that has flat fore feet; besides, her hoofs are very hard. About a year ago she commenced to show tenderness in one fore foot and seemed to be worse when driven on hard roads. This is a good useful mare and I would like her made well. H. A. K., Springvale, Pa.—First of all, let me say that a flat foot is usually a weak one; both wall and sole being somewhat thin, the foot is easily bruised. For this reason it is always good practice to apply a wide-webbed shoe. Sometimes it is necessary to put on a bar shoe and very often it is helpful to apply a leather sole with some tar and oakum between leather and sole. This sort of shoeing usually protects the bottom of foot from becoming bruised or punctured. A very good external application to hoof is lanolin (wool fat) and it should be applied daily. The growth of horn will be hastened by applying cerate of cantharides to coronet, 3 or 4 times a month.

Navicular Disease—Sweeney.—I have been a reader of your paper for sometime and like it very much. Last summer I traded for a 1,200 pound lame horse. The lameness was in left fore leg and I blistered shoulder twice. Some time later I had a veterinarian put in seatons in the shoulder, as he thought the whole trouble was sweeney. This treatment does not appear to do him any good. It is my opinion that the soreness is in foot, because he is inclined to stand pretty straight on pastern and dislikes to let heel down. He travels best when shod with high heeled shoes. G. M., Hogestown, Pa.—I am inclined to believe this a case of coffin joint lameness. The horse will be benefited by applying 1 part red iodide mercury and 8 parts cerate of cantharides to coronet every 10 days. The sweenied part of shoulder should be clipped. Then apply 1 part powdered cantharides and 6 parts fresh lard every week or 10 days.

Lice on Cow.—I bought a cow two months ago and now find that she has lice. I have been grooming her with a comb and brush which are kept in the same box with the grooming tools that I use on my horses. This cow is due to come fresh the latter part of this month and is now giving four quarts of milk daily. I am feeding her equal portions of wheat bran, middlings, ground oats and alfalfa meal, moistened with water and a little salt added. Of course she has all the course fodder she will eat, besides her grain. D. A. H., Woodbury, N. J.—If you will drop 5 oz. of crushed stavesacre seed in a gallon of boiling water and keep it boiling gently for two hours, then strain and fill to original gallon by adding water, then apply to cow 2 or 3 times, you will kill every louse on her and not injure her. But killing the lice on the cow, does not kill those that are in your brushes, stall walls and litter about the stable. Spray the walls and saturate grooming utensils with a mixture of 1 part carbolic acid and 30 parts water. This should be done two or three times.

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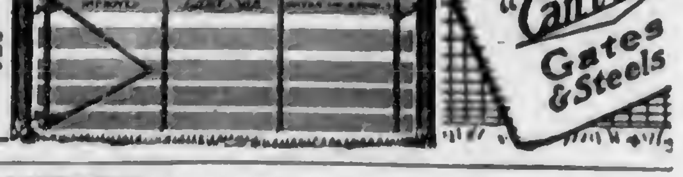

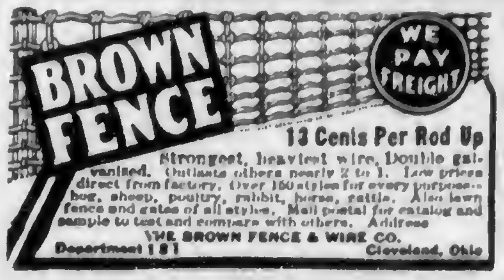

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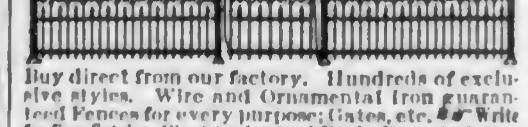

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXII (concluded)

"Pride of my own folly has put it out of my power to denounce you without abandoning what I have set my heart upon, and after all it is not my business," he said. "I will give you five hundred dollars and you can go to Chicago or Montreal and consult a specialist. If the money is exhausted before I send for you, I will pay your hotel bills, but every dollar will be deducted when we come to the reckoning."

Courthorne laughed a little. "You had better make it seven fifty. Five hundred dollars will not go very far with me."

"Then you will have to husband them," said Winston dryly. "I am paying you at a rate agreed upon for the use of your land and small bank balance behind me, and want all of it. The rent is a fair one in face of the fact that a good deal of the farm consisted of virgin prairie, which can be had from the Government for nothing."

He said nothing further, and soon after he went out Courthorne went to sleep, but Winston sat by an open window with a burned-out cigar in his hand staring at the prairie while the night wore thru, until he rose with a shiver in the chill of early morning to commence his task again.

A few days later he saw Courthorne safely into a sleeping car with a ticket for Chicago in his pocket, and felt that a load had been lifted off his shoulders when the train rolled out of the little prairie station. Another week had passed when, riding home one evening, he stopped at the Grange, and, as it happened, found Maud Barrington alone. She received him without any visible restraint, but he realized that all that had passed at their last meeting was to be tacitly ignored.

"Has your visitor recovered yet?" she asked.

"So far as to leave my place, and I was not anxious to keep him," said Winston, with a little laugh. "I am sorry he disturbed you."

Maud Barrington seemed thoughtful. "I scarcely think the man was to blame."

"No?" said Winston.

The girl looked at him curiously and shook her head. "No," she said. "I heard my uncle's explanation, but it was not convincing. I saw the man's face."

It was several seconds before Winston answered, and then he took the bold course.

"Well?" he said.

Maud Barrington made a curious little gesture. "I know I had seen it before at the bridge, but that was not all. It was vaguely familiar and I felt I ought to know it. It reminded me of somebody."

"Of me?" and Winston laughed.

"No. There was a resemblance, but it was very superficial. That man's face had little in common with yours."

"These chance likenesses are not unusual," said Winston, and once more Maud Barrington looked at him steadily.

"No," she said, "of course not. Well, we will conclude that my fancies ran away with me, and be practical. What is wheat doing just now?"

"Rising still," said Winston, and [illegible] the sincerity with which he had seized the opportunity of changing the theme, when he saw that it had not escaped the notice of his companion. "You and I and a few others will be rich this year."

"Yes, but I am afraid some of the rest will find it [illegible] only further anxieties for them."

"I know," said Winston. "You are thinking of [illegible]."

Maud Barrington nodded. "Yes. I am still afraid."

"Then it would please you if I tried to straighten out things for him? It would be difficult, but I believe it could be accomplished."

Maud Barrington's eyes were grateful, but there was something that Winston could not fathom behind her smile.

"If you undertook it, one could almost believe you had the wonderful gift," she said.

Winston smiled somewhat dryly. "Then all its virtues will be tested to-night, and I had better make a commencement while I have the courage. Colonel Barrington is in?"

Maud Barrington went with him to the door, and then laid her hand a moment on his arm. "Lance," she said, with a little tremor in her voice, "if there was a time when our distrust hurt you, it has recoiled upon our heads. You have returned it with a splendid generosity."

Winston could not trust himself to answer, but walked straight to Barrington's room, and finding the door open went quietly in. The head of the Silverdale settlement was sitting at a littered table in front of a shaded lamp, and the light that fell upon it showed the care in his face. It grew a trifle grimmer when he saw the younger man.

"Will you sit down?" he said. "I have been looking for a visit from you for some little time. It would have been more fitting had you made it earlier."

Winston nodded as he took a chair. "I fancy I understand you, but I have nothing that you could expect to hear to tell you, sir."

"That," said Barrington, "is unfortunate. Now, it is not my business to pose as a censor of the conduct of any man here, except when it effects the community, but their friends have sent out a good many young English lads, some of whom have not been too discreet in the old country, to me. They did not do so solely that I might teach them farming. A charge of that kind is no light responsibility, and I ask for assistance from the men who have almost as large a stake as I have in the prosperity of Silverdale."

"Have you ever seen me do anything you could consider prejudicial to it?" asked Winston.

"I have not," said Colonel Barrington.

"And it was by her own wish Miss Barrington, who, I fancy, is seldom mistaken, asked me to the Grange?"

"It is a good plea," said Barrington. "I cannot question anything my sister does."

"Then we will let it pass, tho I am afraid you will consider what I am going to ask a further presumption. You have forward wheat to deliver, and find it difficult to obtain it?"

Barrington's smile was somewhat grim. "In both cases you have surmised correctly."

Winston nodded. "Still, it is not mere inquisitiveness, sir. I fancy I am the only man at Silverdale who can understand your difficulties, and what is more to the point, suggest a means of obviating them. You still expect to buy at lower prices before the time to make delivery comes?"

Again the care crept into Barrington's face, and he sat silent for almost a minute. Then he said, very slowly, "I feel that I should resent the question, but I will answer. It is what I hope to do."

"Well," said Winston, "I am afraid you will find prices higher still. There is very little wheat in Minnesota this year, and what there was in Dakota was cut down by hail. Millers in St. Paul and Minneapolis are anxious already, and there is talk of a big corner in Chicago. Nobody is offering grain, while you know what land lies fallow in Manitoba, and the activity of their brokers shews the fears of Winnipeg millers with contracts on hand. This is not my opinion alone. I can convince you from the papers and market reports I see before you."

Barrington could not controvert the unpleasant truth he was still endeavoring to shut his eyes to. "The demand from the East may slacken," he said.

Winston shook his head. "Russia can give them nothing. There was a failure in the Indian monsoon, and South American crops were small. Now, I am going to take a further liberty. How much are you short?"

Barrington was never sure why he told him, but he was hard pressed then, and there was a quiet forcefulness about the younger man that had its effect on him.

"That," he said, holding out a document, "is the one contract I have not covered."

Winston glanced at it. "The quantity is small. Still, money is very scarce and bank interest almost extortionate just now."

Barrington flushed a trifle, and there was anger in his face. He knew the fact that his loss on this sale should cause him anxiety was significant, and that Winston had surmised the condition of his finances tolerably correctly.

"Have you not gone quite far enough?" he said.

Winston nodded. "I fancy I need say no more, sir. You can scarcely buy the wheat, and the banks will advance nothing further on what you have [illegible] at Silverdale. It would be perilous to put yourself in the hands of a mortgage broker."

Barrington stood up very grim and straight, and there were not many men at Silverdale who would have met his gaze.

"Your content is a little too apparent, but I can still resent an impertinence," he said. "Are my affairs your business?"

"Sit down, sir," said Winston. "I fancy they are, and had it not been necessary, I would not have ventured so far. You have done much for Silverdale, and it has cost you a good deal, while it seems to me that every man here has a duty to the head of the settlement. I am, however, not going to urge that point, but have, as you know, a propensity for taking risks. I can't help it. It was probably born in me. Now, I will take that contract up for you."

Barrington gazed at him in bewildered astonishment. "But you would lose on it heavily. How could you overcome a difficulty that is too great for me?"

"Well," said Winston, with a little smile, "it seems I have some ability in dealing with these affairs."

Barrington did not answer for a while, and when he spoke it was slowly. "You have a wonderful capacity for any one to believe in you."

"That is not the point," said Winston. "If you will let me have the contract, or, and it comes to the same thing, buy the wheat it calls for, and if advisable sell as much again, exactly as I tell you, at my risk and expense, I shall get what I want out of it. My affairs are a trifle complicated and it would take some little time to make you understand how this would suit me. In the meanwhile you can give me a mere I O U for the difference between what you sold at, and the price today, to be paid without interest and whenever it suits you. It isn't very formal, but you will have to trust me."

Barrington moved twice up and down the room before he turned to the younger man. "Lance," he said, "when you first came here, any deal of this kind between us would have been out of the question. Now, it is only due to tell you that I have been wrong from the beginning, and you have a good deal to forgive."

"I think we need not go into that," said Winston, with a little smile. "This is a business deal, and if it hadn't suited me I would not have made it."

He went out in another few minutes with a little strip of paper, and just before he left the Grange placed it in Maud Barrington's hands.

"You will not ask any questions, but if ever Colonel Barrington is not kind to you, you can show him that," he said.

He had gone in another moment, but the girl, comprehending dimly what he had done, stood still, staring at the paper with a warmth in her cheeks and a mistiness in her eyes.

(To be continued.)

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"A mischievous lad of Bungtown threw a stone and struck a companion in the alley last Tuesday."

"Joe Doe climbed on the roof of the house, last week, looking for a leak, and fell, striking himself on the back porch."

"While Harold Green was escorting Miss Violet Wise from a church social, last Saturday night, a savage dog attacked them and bit Mr. Green on the public square."

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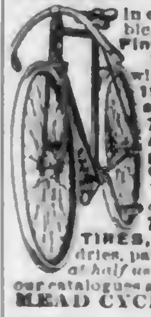

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 16, 1914.

Receipts of fancy print butter well cleaned up at top prices. Eggs were firm due to an expected falling off of receipts on account of present stormy weather. The demand was sufficient to absorb the limited receipts of fancy poultry stock. Fruits and vegetables show moderate offerings and firm prices.

Butter.—Western creamery, 31c; extras, 29c; firsts to seconds 25@27½c; special prints 35@38c; near-by prints, 32c.

Eggs.—Candled, 32@34c doz; extras, 30c. Current receipts at $8.10 per standard case.

Poultry.—Fowls, 19@20c; old roosters, 12@13c; pigeons, 25@30c pair.

Dressed Poultry.—Western fowls, 12@18c; roosters, 14½c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 70@85c bu. Onions, $2.75@3 per 100-lb bag. Peppers $2@2.25 per carrier. Eggplant $2.50@4.00 per crate. Lettuce $1@2.50 hamper. Beets, new 5@8c bch. Sweet potatoes, 40@55c bas. String beans, $2.00@3.50 hamper. Squash, $1.50@2.00 box. Cucumbers, Florida $4@6 hamper. Celery, 50@65c per doz. stalks. Cabbage, new $1.50@$2 ½-bbl crate. Cauliflower, $1.50@1.75 hamper.

Fruit.—Apples $3.50@6 bbl. Pineapples, per crate, $2.50@3.50. Pears, 50@75c bas. Grapes $4@7 keg; cranberries, $2.50@3.50 crate; lemons, $2.50@4 per box; grape fruit $2@4 per box; oranges, $2@3 per box.

Hay and Grain.—No. 3 hay, large bales, $17.50@18.00; No. 1 medium, $17@17.50; no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.00@16.50. Straw No. 1 new straight rye, $16.50; No. 2 do., $15@15.50; No. 1 tangled rye straw new $12; No. 2 do., $11.00@11.50; No. 1 wheat straw, $9.50@10.00; No. 1 oat straw, $10.50@11.00; new shelled corn No. 2 yellow, 71½@72½c. Wheat, No. 2 red, 98@98½c No. 1 Northern, $1.03@1.04; No. 2 white oats, 45@45½c; No. 3, white, 45@45½c. Standard white, 44½@45c.

Coffee.—Rio 7s 9½c; Santos 4s 12⅛c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.10 cwt.; cubes, $4.35; powdered, $4.20; granulated, $4.10; standard granulated, $4.15; crystal A, $4.10.

Flour.—For 196 lbs. in wood, winter-clear, $3.75@4.00; do straight, $4.20@4.40; favorite brands, $4.75@5.15; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17¾c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos. 5 to 12 and up, $1.55@2.75; do. green, 14@15c.

Provisions.—City beef, in sets, smoked and air dried, 32@32½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13½@14½c; skinned, 14@14½c; smoked, 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 12@13c; do. smoked, 12@13c. Bellies in pickle, 13¼@13¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 12@12¼c tcs; do in tubs, 12⅛@12⅜c; do kettle rendered, 12@12¼c. Tallow, prime city, 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

BALTIMORE PRODUCE.

Baltimore, Md., Feb. 16, 1914.

In the Baltimore wholesale market butter was steady. Eggs were firmer at 28c. Poultry steady.

Butter.—Creamery, fancy, 28@28½c; do. choice, 26@27c; prints 29@30c; blocks 28@29c; Maryland and Penna. rolls, 19@20c. Process, 24@25c.

Eggs.—Near-by firsts, 28c; western, 28c; southern, 27c.

Live Poultry.—Hens, 18c; chickens, 18c; old roosters, 11c; ducks, 18@19c.

Dressed Poultry.—Turkeys, 24@25c; chickens, 18@21c; old roosters, 10@11c; ducks, 18@20c.

Vegetables.—Potatoes, Maryland and Penna. 70@75c bu; Beets, 5@7c bch. Beans, green $3.50@4 per basket. Celery, $1.75@2.25 crate. Cucumbers, $4.00@5.00 bas. Lettuce $1@$2 bas. Tomatoes, $2.50@3.25 carrier. Onions $1.25@1.40 bu. Eggplant $3.00@3.50 crate. Spinach $1.75@1.90 bbl. Squash $1.50@2 crt. Cauliflower, $1.50@2 crt. Cabbage, $25@28 ton.

Fruits.—Apples, $3.50@5.00 bbl. Cranberries, $11@14 bbl. Grapefruit $2.50@3.75 box.

Mill Feed.—Spring bran $27.00. Middlings, flour to white, $27.00@29.00; western middlings, $26.50@27; city mills, mid., $26.50@27.00.

Grain.—Wheat, No. 2, red western, 99⅛c; Spot, 98¾c; corn yellow shelled, 71c; Oats standard, white, 44@44¼c; No. 3 white 45@45½c. Rye, 60@68c.

Hay and Straw.—Timothy No. 1, $17.50@18; No. 2 timothy $16@16.50; do. No. 3, $14.00@15.00. No. 1, clover, $14@15; No. 2, do., $12.50@14; No. 1, tangled rye straw, $11.50@12; No. 1 oat straw, $9.50@10.50; No. 1 wheat straw, $7.50@8.00.

NEW YORK PRODUCE

New York City, Feb. 16, 1914.

With a short supply butter values are higher. Owing to the recent stormy weather egg prices are rather irregular altho there is a fairly well established advance. There is little demand for poultry, and receipts are rather light. Cold weather conditions have made uncertain values in fruits and vegetables.

Eggs.—State and near-by hennery whites, fine to fancy, 39@40c; gathered whites, 39c; fair to good 37@38c; no grades, 34@36c; fresh gathered, firsts to extras, 30@31c; seconds to thirds, 26@29½c; no grades 20@23c; mixed 30@31c.

Butter.—Creamery, firsts to extras, 28@32c; thirds to seconds, 21½@27c; state dairy 20@22c; packing stock 16@19½c; process 20@23c.

Cheese.—Whole milk specials, 18@18½c do. common to fancy, 14½@17¾c; skims 5@14¼c.

Dressed Poultry.—Turkeys, dry, 23@25c; chickens, 14@25c; fowls, 12@18½c; old roosters, 13½c; ducks 10@16c.

Live Poultry.—Prices not settled.

Vegetables.—Cabbage, $22.00@26.00 ton. Green beans, $1.50@4.50 bas. Carrots $1.75@2 bag. Cucumbers, $1@$2 doz. Lettuce 50c@$4 basket. Squash, $2.25@3 bbl. Celery, $1.50@4.00 per stan. case. Onions $2.75@3 100-lb bag. Tomatoes, $1.00@4.00 carrier. Peppers $2@2.75 per carrier. Beets, $3@5 per 100 bunches. Potatoes, $1.75@5.50 bbl. Sweet potatoes, $1.50@2.00 bbl. Eggplants, $2.50@3.50 box. Cauliflower $1.00@1.75 bas.

Fruit.—Apples, $2.00@6.00 bbl. Cranberries $9@13.50 bbl. Pears, $2@3.75 bbl.

Grain.—Wheat No. 2, red $1.02; No. 1, Northern, $1.04¾; corn, new No. 3 yellow, 69¾c; oats, standard white 45@45½c.

PHILADELPHIA LIVE STOCK

Beef Cattle.—The market shows a better tone and choice steers brought good prices. Lancaster, Pa., and Ohio cattle were principally in evidence. The better class of cows as well as the most desirable calves closed a fraction firmer.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,934	8,358	4,948
Previous week	2,575	8,291	5,839

Best Steers	$8.80@9.00
Choice steers	8.60@8.75
Good	8.40@8.50
Medium steers	8.00@8.25
Common steers	7.50@7.75
Bulls	5.25@6.85
Fat Cows	6.20@7.00
Medium cows	4.75@5.75
Thin cows	3.00@4.50
Milk cows	45.00@75.00

Veal calves steady to firm.

Best calves	$11.50@12.25
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	5.00@8.00

Sheep and Lambs.—There was a fair disposal of stock with the best lambs a trifle easier.

Choice wethers	5.75@6.00
Good do.	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	5.00@5.50
Extra lambs	8.25@8.50
Good to choice, do.	8.00@8.25
Common to medium	5.50@8.00

Hogs.—The market closed firm at the prices with a good absorption of arrivals. Western, as to size and quality $12.50@12.75.

City Dressed Stock.—Every kind of choice and prime meat commanded full values, with trade normal. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 16, 1914.

Cattle.—With only a supply of 75 loads compared with 100 loads the previous week and a good demand the market ruled 10 to 25 cents per cwt. higher. The light and medium grades sold at the most of the advance. Several buyers for weighty cattle were in the market and the good weight cattle sold from $8.90 to $9.15. The quality of the cattle on sale this week was better than last week. Heifers, fat cows and bulls were in demand and sold at about the same advance as steers. Fresh cows and springers slow and lower. With 125 loads on sale this morning, the demand was moderate, and the market slow and lower on all grades.

Good to choice	$8.90@9.00
Good 1,300-1,400 lb	8.30@8.70
Medium to good 1,200-1,300 lb.	8.10@8.35
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb	7.60@8.00
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.00@6.50
Heifers	5.50@7.75
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves.—Receipts of calves fair and with good demand market closed 50 cents higher than Monday's prices. With 400 head on sale, today's calf market was steady.

Heavy and thin calves	$5.50@8.00
Veal calves	8.50@12.00

Sheep and Lambs.—The supply of sheep and lambs has been fair; with a good demand sheep ruled steady to strong, while the demand for lambs has not been so good and the close for the week was 15c per cwt. below Monday's prices. The demand for sheep today was only fair, tho the market was steady. Lambs were lower.

Prime wethers	$6.10@6.25
Good mixed	5.40@5.65
Fair mixed ewes and wethers	4.25@5.00
Culls to common	3.00@3.50
Spring lambs	5.50@8.00

Hogs.—The supply of hogs has been liberal; the market ruled steady during the early part of the week but the close for the week was 10 cents lower on all grades. Today's hog market was steady with 55 double-deck loads on sale.

Prime heavy	$9.10@
Prime medium weights	9.10@
Heavy mixed	9.15@
Best heavy Yorkers	9.15@
Light Yorkers	9.15@
Pigs	9.00@9.05
Common to good roughs	7.75@8.35
Stags	6.75@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 16, 1914.

Cattle.—The cold weather and the active opening of the week restricted receipts and put the market in good condition on choice butcher grades. On the close the basis was unchanged. The supply was light and the market firm at the week's opening figures. Today's receipts were fairly liberal, totaling 3,750 head. The market was active and stronger.

Choice heavy steers	$9.00@9.25
Medium	8.25@8.75
Yearlings	8.00@8.50
Handy butchers	7.50@8.50
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.50@8.00
Butcher bulls	6.00@7.50
Feeders	6.25@7.00
Stockers	5.00@6.25
Cows and springers	35.00@85.00

Calves.—The trade was fair during the week with moderate receipts. The opening basis was $11@12 for choice veals. On the close the supply was light, the demand good and the market 50@75c higher. All grades were firm and the basis $12.50@13 on choice. With 800 head on sale, today's market was steady.

Choice veals	$12.50@13.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The trade opened fair considering the liberal receipts and the demand was generally good for choice lambs; yearlings were scarce and sold higher during the week. The basis was $6@7.35. On the close the market was steady with liberal offerings. The best lambs brought $7.75@8. Yearlings were in fair demand and easy—the best brought $6.75@7. Choice handy sheep were firm. Wethers firm at $6@6.25. Today's run of 20,000 head was heavy but the market was generally steady to 25c higher.

Choice lambs	$8.00@8.25
Yearlings	7.00@7.25
Wethers	6.25@6.40
Ewes	5.75@6.00
Sheep	6.00@6.25

Hogs.—The active opening of the week put the market in fair shape, owing principally to the cold weather. York weights were firm and heavies were firm and higher. On the close the demand was light and the market 20@30c lower. City and country buyers took but a moderate number. Common grades were slow and lower. The basis on Yorkers was $9.05@9.10. Receipts this morning numbered 20,000 head. The market was steady to higher.

Heavies	$9.00@9.15
Mixed and medium	9.15@9.20
Yorkers	9.15@9.20
Light Yorkers	9.15@9.20
Pigs	9.15@9.20
Roughs	8.00@8.25
Stags	6.50@7.50

Horses.—The supply was fair, 600 head. Fair demand for choice heavy work teams. Best young, well matched, heavy teams, $650@700; medium, $500@600.—S.

NEW YORK MILK MARKET

The condition in the milk market was complicated last week by the heavy snow storm. Delayed trains on Sunday and Monday caused a shortage on the latter day of more than 5,000 cans. The farmers in some cases could not get their milk thru the drifts to the railroads and some of the roads, the New York Central Lines in particular, had great difficulty in moving their trains. Some of the big companies, the Borden and the Sheffield Farms in particular, were unable to supply all their customers and there was a shortage of certified milk for the babies. The February demand is normal, but the supply far exceeds it. It is expected that delinquents in the pasteurization of their supplies will soon find at the hands of the Board of Health how unsatisfactory it is to fail to take time by the forelock. Receipts of milk and cream in 40-qt. cans for the week ending February 14, were as follows:

Railroad	Milk	Cream
Erie	43,298	1,757
Susquehanna	9,475	546
West Shore	15,750	712
Lackawanna	51,675	1,290
N. Y. Central (long haul)	78,003	1,274
N. Y. Central (short haul)	11,570	86
Ontario	41,905	3,138
Lehigh Valley	36,984	886
Homer Ramsdell Line	3,350	25
New Haven	8,690	112
Pennsylvania	2,450	350
Other sources	1,655	14
Total	304,805	10,190

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 16, 1914.

Cattle.—Receipts for the week, 1,494 head against 2,408 last week.

Steers	$6.25@8.55
Heifers	5.50@7.25
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh Cows	35.00@88.00

Sheep and lamb receipts for the week were 2,196 head against 4,470 last week. Fair supply; market steady.

Sheep	$3.50@6.25
Lambs	5.75@8.45

Hog receipts for the week were 13,930 head against 15,549 last week.

Light Western	$9.50@9.55
Heavy to medium	9.35@9.40
Near-by	9.25@9.40
Pigs	9.00@9.25

Calves.—Receipts for the week were 308 head, against 219 head last week. Fair supply, market higher at $6.50@11.50.

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 16, 1914.

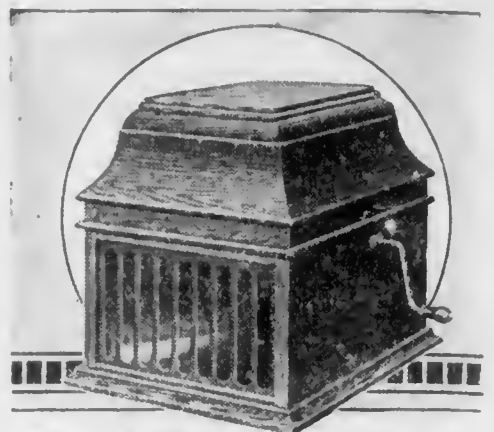
The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 30c.

TOBACCO MARKET

The sale of the new crop continued in a very limited way, several of the larger concerns having withdrawn their buyers and local packers waiting for lower prices. With the present improved conditions these packers may not realize their hopes. Some communities sold a part of their crop as follows: Manor Township 300 acres at $8@9; Leacock township one-third of crop at $8@9.50; West Lampeter, one-half of crop at $8.50@10; Rohrerstown, small sales at $9@10; Conestoga, one-half of crop at $8@10.50; Gap, large sales at $8@9 per cwt. At East Lampeter not much is sold and the same is true at Quarryville, Paradise and Ephrata.

The tobacco and corn show held under the direction of the Lancaster County Tobacco Growers' Association was a great success. The entries in all classes were numerous and worthy. Following are prize winners: Broadleaf filler—First, Geo. Hibshman; second, J. A. Herr; third, H. K. Landis. Broadleaf binder—First, L. H. Gochenauer; second, J. J. High; third, C. Mellinger. Broadleaf wrapper—First, Wayne Hartman; second, L. H. Gochenauer; third, J. S. Reynolds. Havana wrapper—First, M. H. Good; second, A. S. Shaubach; third, M. H. Good. An interesting feature of the show was an exhibit of some fifty samples of tobacco grown in various parts of the country from Wisconsin to Florida. Owing to the success of the exhibit it was proposed to hold a state wide tobacco show at some future time.

An enthusiastic meeting of the tobacco organization was held during the show. This meeting was attended by some 200 growers many of whom were not memebers but simply attending the exhibit. It was announced that the findings of the joint committee of this and the local dealers' association relative to the best methods of tobacco culture would be published soon. A matter of far greater interest, however, was the presence of Mr. Kimbrough, the organizer, and the presentation of some of his plans to aid the grower. He said that farmers must organize and suggested his plan of establishing warehouses and appointing sales agents. He outlined the organization methods of the burley section of Kentucky and Ohio and stated that growers there received $15 to $18 per cwt. for tobacco that, had they not been organized, would have sold at $6 per cwt. He said that, in time, the Seed Leaf Tobacco Growers' Company will be organized and launched after which he will, if desired, cease further activities.—H. E. Tweed, Feb. 16, 1914.



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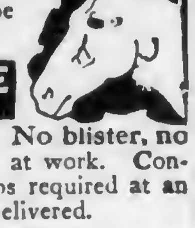

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Worms—Thick Urine.—I have a five year-old horse that shows symptoms of worms. His urine is thick and yellow in color. E. F., Pittsfield, Pa.—Mix together equal parts by weight powdered sulphate iron, powdered nitrate of potash, ground gentian, fenugreek and cooking soda. Give him a tablespoonful at a dose in feed, 3 times a day for 30 days.

Diabetes.—I have a horse that is about 10 years old. His kidneys are not right and for the past two months I have been treating him, giving him remedies prescribed by my neighbors. He does not improve. His urine is nearly white, having much the appearance of lime water. H. C. W., Elmer, N. J.—Give him 2 dr. potassium iodide at a dose in feed 3 times a day for a week; then give a teaspoonful of powdered nitrate of potash and a tablespoonful of powdered rosin at a dose, 2 or 3 times a day for a week. Then give the medicine as often as you believe it necessary to keep the kidneys active. A change of feed and regular daily exercise would doubtless have a good effect.

Flat Fore Feet.—I have a 10-year-old mare that has flat fore feet; besides, her hoofs are very hard. About a year ago she commenced to show tenderness in one fore foot and seemed to be worse when driven on hard roads. This is a good useful mare and I would like her made well. H. A. K., Springvale, Pa.—First of all, let me say that a flat foot is usually a weak one; both wall and sole being somewhat thin, the foot is easily bruised. For this reason it is always good practice to apply a wide-webbed shoe. Sometimes it is necessary to put on a bar shoe and very often it is helpful to apply a leather sole with some tar and oakum between leather and sole. This sort of shoeing usually protects the bottom of foot from becoming bruised or punctured. A very good external application to hoof is lanolin (wool fat) and it should be applied daily. The growth of horn will be hastened by applying cerate of cantharides to coronet, 3 or 4 times a month.

Navicular Disease—Sweeney—I have been a reader of your paper for sometime and like it very much. Last summer I traded for a 1,200 pound lame horse. The lameness was in left fore leg and I blistered shoulder twice. Some time later I had a veterinarian put in seatons in the shoulder, as he thought the whole trouble was sweeney. This treatment does not appear to do him any good. It is my opinion that the soreness is in foot, because he is inclined to stand pretty straight on pastern and dislikes to let heel down. He travels best when shod with high heeled shoes. G. M., Hogestown, Pa.—I am inclined to believe this a case of coffin joint lameness. The horse will be benefited by applying 1 part red iodide mercury and 8 parts cerate of cantharides to coronet every 10 days. The sweenied part of shoulder should be clipped. Then apply 1 part powdered cantharides and 6 parts fresh lard every week or 10 days.

Lice on Cow.—I bought a cow two months ago and now find that she has lice. I have been grooming her with a comb and brush which are kept in the same box with the grooming tools that I use on my horses. This cow is due to come fresh the latter part of this month and is now giving four quarts of milk daily. I am feeding her equal portions of wheat bran, middlings, ground oats and alfalfa meal, moistened with water and a little salt added. Of course she has all the course fodder she will eat, besides her grain. D. A. H., Woodbury, N. J.—If you will drop 5 oz. of crushed stavesacre seed in a gallon of boiling water and keep it boiling gently for two hours, then strain and fill to original gallon by adding water, then apply to cow 2 or 3 times, you will kill every louse on her and not injure her. But killing the lice on the cow, does not kill those that are in your brushes, stall walls and litter about the stable. Spray the walls and saturate grooming utensils with a mixture of 1 part carbolic acid and 30 parts water. This should be done two or three times.

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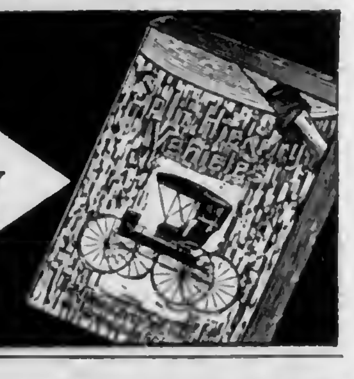

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Sowing The Seed of Co-operation.

By F. R. STEVENS,
Agriculturist of Lehigh Valley R. R.

Ever since its organization the efforts of this Department have been directed toward the increase of profits for the farmers. Realizing that this could best be done by co-operative enterprises, a good deal of effort has been expended looking toward its formation. It seemed imperative in some way first to increase the quality of the dairy herd and that the best way to accomplish this was by the organization of cow-testing associations. After a considerable effort, this resulted in the early part of 1913 in the formation of the Laurel Hill Cow-Testing Association, located in Bradford County, Pennsylvania.

So great was the indifference of farmers that it was necessary to canvass from East Smithfield to North Orwell, about twenty-five miles, for members for the association. It began work in September 1913 with such favorable results that it now seems probable that in another year there will be several such associations in this territory.

The plan of operation is briefly this: An expert is employed in this association, a graduate of the Pennsylvania College of Agriculture, who spends a day with each herd every month. He weighs and tests the milk of each cow for that day, estimating also the exact cost of her feed. In a book left with the farmer he makes a record of these results, basing product and its cost for a month upon his observations for the one day. At the end of a year the farmer has the data showing what cows have paid a profit and how much and also what cows have been kept at a loss. The minimum expense is $18 a year for those who have fourteen cows or less; for those who have fifteen or more the expense is $1.25 for each cow. No single farmer of that section has a sufficient herd to keep an expert wholly on the matter of feeding cows and determining results, but by co-operation each man now has a record of every cow in his herd and if I am not greatly mistaken there will be some cows for sale around Laurel Hill in a short time.

One such association naturally leads to other associations, or in other words, the scope of co-operative work broadens and as a result of the first the Farmer's Supply Company was organized in the Fall of 1913 and began business December first. It is designed primarily to furnish farmers feed at less than they have been paying. It is capitalized at $5,000, in shares of $25 and one man cannot own more than five. The Company employs, upon a 2 percent commission, an agent who handles the feed and keeps the accounts. Feed is sold, at a small advance over cost, strictly for cash, but it is likely that some arrangement will be made so that time may be given. Anyone may buy, but only stockholders and those who pay an annual fee of $2 may share in the profits which are to be divided quarterly. During the first month the Company sold $2,000 worth of feed, and this would seem to be a good beginning. While organized to handle feed it is likely to become literally a Farmer's Supply Company, and deal in flour, fertilizer, etc., until it sells to its members as near cost as possible, practically all the articles they buy.

And again, this led to a new feature, the establishment of a dairy company. The history of the East Smithfield Dairy Company begins in the last months of 1912, when a new company bought the skimming stations and creameries in this section. These had been owned by two parties and, when another company bought them, the farmers tried to find out how the business was to be conducted. Thru no fault of the real owner, but because of replies by a manager with an unfortunate manner in dealing with farmers, they became dissatisfied with the outlook and organized a company of their own. About 90 men subscribed for stock and some 600 cows were promised for the new enterprise. Early in February the company was organized with an authorized capital of $5,000, of which up to date only $4,000 has been issued, and active work was begun. It was necessary to build and fill an ice house, to erect and equip a creamery and to drill a well that would furnish abundant supply of water. This became a matter of some haste as the farmers interested in the co-operative creamery were required either to withdraw or to cease bringing milk to the other creameries. They would not back down and that meant taking their milk or cream to independent creameries, about seven miles distant. This they did from the middle of February until the middle of May, when their own creamery opened for business.

THE UNPRETENTIOUS BUT BUSY CO-OPERATIVE CREAMERY AT EAST SMITHFIELD, BRADFORD CO., PA., WHICH IS THE CENTER OF A NUMBER OF CO-OPERATIVE MOVEMENTS.

As has been said, the East Smithfield Dairy Company began business the middle of May. The ice house was full, the creamery was completed with up-to-date appliances, and not least of all, there was a flowing well delivering a stream of pure water, 50 degrees Fah. at any point in the creamery without the use of a pump. They expected 600 cows; they began with 900 and now have over 1200. In seven and one-half months they have made 155,619 pounds of butter. They have paid their patrons for butter fat, in excess of highest New York quotations for creamery extras approximately as follows: May, $.037; June, $.033; July, $.035; August, $.044; September, $.042; October, $.036; November, $.05; December, $.05, in the open market; in all, nearly $2,500 more than they would have received at present prices. Out of a charge of three cents per pound for making, they are paying stockholders a dividend of 10 percent, and have in the treasury about $1,200.

Up to the first of January they received for their butter at their railroad station on the Lehigh Valley one cent a pound above New York. For 1914 they sell in Philadelphia at $.015, $.025 and $.03 above New York, according to form of shipment. It is thought that the price will net a half cent better than last year's price and as they will make this year for 2½ cents per pound, patrons will receive about a cent per pound more than in 1913. Below is a partial statement showing amount of business done thus far.

This brief account of the East Smithfield Dairy Company is given with the thought that elsewhere farmers in butter-making sections may be encouraged to do better for themselves. If we add together the $400 paid for interest, the $1200 now in the treasury, and the $2,500 paid to patrons in excess of what they would have received for the same product at other creameries, it is apparent that this Company could have paid to their patrons what they would have received elsewhere and returned to stock-holders the entire investment, and have done it with the profit of seven and one-half months' business. This remarkable showing is due to absolute harmony in the Board of Directors, to the large number of cows and to the unanimous support of patrons.

The scheme of co-operation among farmers is not limited by any means to butter making. It merely happens that in this section, which is a famous butter country, they are working out their salvation as butter makers. Butter making in a way is disappearing from the East. The great cities are requiring the whole milk and the manufacture of butter is largely beyond the zones that supply the milk to the great consuming centers; but the same principles would apply equally well in the making of milk, in the production of hogs, fruit, alfalfa for hay or whatever it may be. The word co-operation seems to be used in discussions of farm subjects more than ever in the history of the world and it is well that it is so. It is also true that under this head many schemes are being advocated which are not practical, which are not for the best interests; but let us keep in sight of the fact that in co-operation alone lies the hope of maximum success. Herein is given one example of how it actually works to great advantage. Thruout the East there are thousands of just such opportunities to bring added profits by working together. Most of us fully appreciate the advantages of such co-operation. What we need is the starting point from which to build.

In Bradford County the logical starting point was the creamery. What is it in your county or community? The following table shows the record of business to January 1, 1914.

	Pounds butter	Price butter fat
Last half of May	12,422	.325
June	31,289	.312
July	28,412	.307
August	22,091	.326
September	18,204	.36
October	15,971	.354
November	13,827	.394
December	13,103	.42

Farm Crop Notes

By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Keep The Farm

As I sit in a hotel office writing this article, two real estate men sit by, swapping experiences and observations and telling of tens of thousands of dollars they have known to be made by men in buying and selling, or operating, timber lands, coal lands, gas and oil wells. These incidents all occurred within the past 25 years. In that time the operators had cleared or pumped the oil wells dry. Altho fortunes have been made, the makers have exhausted the natural resources and can never replace them.

The two men referred to, deplored the fact that opportunities for speculation in that class of property are few and far between. They then voiced the opinion often given by the writer that the next and only great natural resource open for investment is farm land. Mankind must always have the products of the soil. So far as we can now see, the ingenuity of man will never be able to furnish food and clothing from any other source. So, as the population and our necessities increase, farm land will be increasingly better property to have.

Because of the rapid way money was made in these other lines many farmers have sold their farms and invested in other property, or worked for wages at other things. But in the long run, often it has not panned out. In some instances, men are working for day's wages on farms that were once owned by their grandfathers. Farmers are too eager to dispose of their farms, thinking they could do better at something else. In a certain community in one of the northwestern counties of Pennsylvania, forty native farmers have recently sold their farms and homes to as many Bohemian farmers. In driving a distance of eight miles recently, in another county, we found that one half the farms had no one living on them. In both of these instances, the farm land is good and the buildings fair. This country needs and always will need, not only the products of the American farms, but the product of the American farm homes—the boys and girls. Peasants won't do.

Mechanical Condition of Soil

Too many farmers consider only the chemical side of the question of soil improvement, forgetting that the mechanical condition is quite, and often of more importance. If the soil is too wet, or too loose or dry or too hard, no amount of fertilizer will make amends. On the other hand, it is often found that a field has plenty of plant food to produce a good crop when it is brought into good "tilth." It would often pay to invest time, labor and money in putting in drains, adding lime, growing sods and cover crops in order that what we do spend in labor and fertilizer might grow a profit.

Don't Skimp

Do not be stingy in sowing grass seed. It is like "saving at the spigot and losing at the bung hole" to try to economize by reducing the amount of seed per acre because it is high in price, or by doing what is still worse, buying cheap dirty, low-grade seed. The best is not too good.—R. P. K.

HIGH SCHOOL SUPERVISORS OF AGRICULTURE AT STATE COLLEGE.
From left to right: T. I. Mairs, H. P. Young, L. H. Guillaume, J. S. Champion; Dean R. L. Watts, R. W. Heim, J. H. Warner, L. H. Dennis, Prof. M. C. Kilpatrick.

For More and Better Corn.

By H. M. ANDERSON, York Co., Pa.

Perhaps many of the Pennsylvania Farmer readers will remember the article by its Editor which appeared in the October 4, 1913, issue describing the activities of the Norrisville Farmers' Club, now the Pen-Mar Agricultural Association, which is incorporated under the laws of Pennsylvania. Knowing that the arousing of local interest in growing and showing corn would materially increase its productiveness and quality, the club decided to conduct a contest among its members during the season just past. Believing that what we have done and propose to do along the line of improving the corn crop will be of interest as well as practical use to a great many of the Pennsylvania Farmer readers, I wish to briefly describe the contest and the corn show which followed in February.

Early last winter a committee consisting of R. W. Anderson, Thomas W. Brown and R. B. McElwain was appointed to arrange a corn growing contest and to draw up, and have printed, a set of rules governing the same. Among other things the rules specified:

"Contestants must all be members of the Pen-Mar Agricultural Association (all farmers and persons interested in agriculture are eligible to election at any regular monthly meeting).

"The test plot shall consist of one-half acre, which need not be picked out or designated by the grower until the judge is ready to measure it.

"Each contestant must advance two dollars, one of which goes to the judge who measures the ground and superintends the harvesting and weighing; the other is added to the prize money.

"Each contestant agrees to have men enough to cut and husk the half acre in 4 or 5 hours."

The judge or judges are appointed by the contest committee and are required to measure and compute the half-acre, weigh the product, take 50 lbs of average ears and shell and weigh corn and cobs and estimate yield of plot in bushels of shelled corn by multiplying the gross weight of ears by the percentage of shelled corn in the 50 lbs. of ears. The association appropriated $25 to which was to be added one dollar from each contestant and the total was to be divided as follows: First prize, 40 percent of total; second prize, 25 percent of total; third prize, 15 percent of total; fourth and fifth prizes, 10 percent of total, each. All contestants were required to register at or before the May meeting.

There were ten members who entered the contest, but two of them, including the writer, found it necessary to drop out owing to circumstances over which they had no control. The other eight contestants produced crops which were measured and weighed by disinterested judges as follows:

		Bu. per A.
1	M. E. Smith	148.36
2	R. W. Anderson	137.22
3	R. B. McElwain	132.12
4	Edgar Metzel	128.71
5	L. M. Brown	127.39
6	John B. Jamison	124
7	Dr. Vallie Hawkins	116.85
8	Thos. W. Brown	101.42

These figures represent estimated actual shelled corn per acre. Four of the contestants selected plots in the main crop where there had been no special fertilizing or cultivating. It should be stated in favor of numbers 7 and 8 that the judge made a mistake in measuring their plots and that this report is based on the second best half acre, also that the chickens had destroyed 15 or more bushels per acre of down corn which does not show in the report. As the value and interest in such reports are based on knowing how such crops are grown, I will describe briefly the growing of the plots that won first and second prizes.

The first prize plot was grown on alfalfa sod, where nine good crops of alfalfa had been cut during the three preceding seasons. The land was comparatively high and level and most of it had no extra fertilizer or manure; there was a good fair coat of good fresh manure and 500 lbs per acre of dissolved rock and kainit. The grower attributes his success, first to seed that had been steadily improved during the last 30 years; second, the alfalfa sod; third, intensive cultivation both before and after the corn was planted.

Plot No. 2 was rather low land but slightly sloping and well drained. It was a two-year clover and timothy sod that had been manured to increase the timothy crop and incidentally the sod to be plowed down. Most of the plot was manured after plowing and the manure well disked into the soil. It had I think, a double application or about 1,000 pounds per acre of the regular corn fertilizer used on the rest of the field. It was well prepared and well cultivated, but only when and as the rest of the field was.

The result of the contest was a surprise both to the contestants and to the community at large. We knew we had been growing big crops of corn but did not realize just how big they were. Outsiders in considering the yield should take into consideration the fact that ours is not a naturally rich soil, and the yields show the result of persistent efforts to improve the soil and the seed and intelligent and thoro cultural methods. I do not believe that there was one plot in the eight that had not had a heavy seeding of crimson clover as a catch crop after each crop of corn during the past twenty or twenty-five years; and this with red clover in the rotation, the feeding of considerable live stock and the careful saving and applying of the manure have gradually built up our soil to a good state of productiveness.

It is not so surprising when some one man reports a crop of 100 or 125 bushels of corn per acre, but when a list of contestants average 127 bushels per acre it certainly should be a source of pride and satisfaction to all parties concerned. It is needless to say that the contest will be conducted this year with more contestants and more intensive methods. The plans are well under way at the present time and if the season proves favorable we should have a still better report to offer next winter.

Last October a committee was appointed and preliminary plans were made for a corn exhibit to be held in connection with the Farmers' Institute at Fawn Grove on February 4 and 5. It was decided that the association offer $60 in prizes for the best Yellow Dent, White Cap Dent and White Dent corn. As is usually the case, a great many of our farmers declined to put their corn on exhibition and pay the entrance fee when they thought some one else might put up better corn, but there were 21 samples entered for the prizes, and almost that many were merely put on exhibition on a separate table where there was no entrance fee to pay. The exhibit was not at all large, but the corn was so large and so good and so well selected that it called from Hon. A. L. Martin, Director of Institutes, the statement that "You might go from Ohio state line to New Jersey and from the Mason and Dixon line to New York and nowhere could you find a display of corn that would approach it in size of ears and quality." As an indication of its quality, I may state that one of our members who won first prize on white corn at the state show in York on January 20-22 did not even land 4th at Fawn Grove.

The display of yellow corn was not quite so large or so good, but a finer display of White Cap Dent would be hard to find at a state show, particularly if size had its due share of consideration. The judging was carefully and conscientiously done by Mr. D. H. Watts of Clearfield county and Mr. E. B. Dorsett, of Tioga county who were speakers at the farmers' institutes. The prizes awarded were as follows:

Yellow Dent.—First, H. M. Anderson, $8.00; second, R. W. Anderson, $6.00; third, Dr. Vallie Hawkins, $4.00; fourth, John M. Brown, $2.00.

White Cap Dent.—First, D. R. Wilson, $8.00; second, M. E. Smith, $6.00; third, C. W. Shaw, $4.00; fourth, Dr. Hawkins, $2.00.

White Dent.—First, John Jamison, $8.00; second, M. E. Smith, $6.00; third, James Richardson, $4.00; fourth, C. W. Shaw, $2.00.

The total attendance at the farmers' institute was 1,850 persons, and if we judge by the comment in the community after the event, both the speakers and their speeches were very highly appreciated. I am sure that our corn growing contest is working for much larger crops of corn and if our corn exhibit will increase the quality of our corn as the "Maryland Farmers Week" show has improved the quality of Maryland corn, anything that we can possibly do and any prizes that we can possibly offer to increase interest in it will be well spent indeed. It was my privilege to carefully examine the Maryland Exhibit three years ago and again the past season, and I want to say that the improvement in quality was a revelation to me. We think that we are a great corn growing nation, but I want to state here that there will be corn crops, and crop averages in advanced communities during the coming 5 or 10 years that will surprise the natives.

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NEW JERSEY STATE BOARD OF AGRICULTURE

The 41st annual meeting of the New Jersey State Board of Agriculture was not a purely agricultural meeting. It degenerated into a sort of political pot pourri. Because of this disposition to inject politics into the proceedings of these bodies the work done was not nearly so successful as that accomplished by the various county boards and granges. Such political maneuvering is bound to result disastrously not only to the agricultural bodies which are compelled to suffer from it, but to the perpetrators thereof, as well.

Motor Tax.—In an address, Job H. Lippincott, State Commissioner of motor vehicles, recalled the recommendation made by him in his annual report, for a fee of one dollar per horse power on all motor machines. In the report referred to he advocated the abolition of the personal tax on automobilists and an increase in fee to $1 per horse power. He now thinks that this would place an undue burden upon the owner of a cheap and small machine while it would allow the owner of a larger machine and expensive car to pay no more and in some instances less than is now paid in combined registration fee and personal tax. Speaking further on the need for new automobile legislation, he declared that there should be a law compelling the hooding of the high powered searchlights on automobiles, so that their rays would strike upon the road without dazzling the eyes of drivers coming in the opposite direction. Also, he urged the enforcement of the law requiring all horse-drawn vehicles to carry lights. Mr. Lippincott also called attention to his bill now pending in the Legislature providing for the licensing of motor busses and charging a special fee of $1.50 per running mile of route in addition to the regular registration fee.

Rural Schools.—Dr. Calvin N. Kendall, State commissioner of education, stated that rural schools have not kept pace with city schools. The first problem to be met, he said, is that of securing a proper force of teachers for the smaller schools. Too many rural teachers are unskilled. Many regard their work in such schools as only temporary and frequently they remain only a year in one position. In one county, referred to as typical of others, more than half the teachers in the one-room schools were shown to be new in their positions this year. Another defect is that many teachers in country districts are unprepared to adapt their instruction to the real needs of the children. Much of the inefficiency in this respect was attributed to the fact that teachers are greatly underpaid in many sections. If salaries could be increased, waste and inefficiency of many schools would be greatly reduced. Moreover, many well-trained teachers object to teaching in the one-room school often owing to the difficulty of securing desirable boarding places, to the unattractiveness of many school buildings in the country, and to the fact that the schools are not properly equipped with books, maps and other apparatus for teaching.

Dr. Kendall deplored the fact that the movement to consolidate schools has not gone on as rapidly as might be wished. A consolidated school usually means a more efficient school, because it can be made a graded school. In reply to critics who fear the centralization of all school authority in the State board of education, he said that it was not the purpose of the department of public instruction in any sense to force consolidation.

CHAMPION EAR AT WEST CHESTER CORN SHOW.

State Population and Production.—Franklin Dye, secretary of the state board of agriculture, showed that population, chiefly thru immigration, is increasing at an enormous annual rate, largely a non-producing element so far as agriculture is concerned, all of whom demand food. The number of farmers is not increasing in like proportion, while the number of men willing and capable to work on medium-sized farms is almost negligible. The total value of the farm crops in 1913 in this state was $35,172,282; vegetables and fruits, $12,000,000; milk, $18,396,000; poultry and eggs, $5,172,000, or a total of $70,740,000. This is an increase of $1,388,537 over 1912. In the last 14 years, the farm crops in New Jersey have increased in value more than $56,000,000.

Tuberculosis.—J. S. Frelinghuysen, president of the commission on tuberculosis in animals, outlined some of the work that has been accomplished by that body. He said it had prevented the wholesale dumping of diseased cattle from other sates into New Jersey. Last year 16,388 cows were imported from other states, and were examined and certified by inspectors of the commission. The preceding year 16,085 head were imported. In addition to this work the commission, upon application, had inspected 227 herds of cattle in the state. It had condemned and killed 424 animals, for which the owners were paid $17,189.

Election.—The board elected the following officers for the ensuing year: President, Joseph S. Frelinghuysen; vice-president, John T. Cox; secretary, Franklin Dye; treasurer, J. Harvey Darnell; executive committee, George E. DeCamp, Theodore Brown and A. J. Rider. The president, vice president and secretary were all re-elected.—D. T. H.

TESTING SEED CORN

A Warning!

In making some tests for germination of seed corn recently, I found the condition much more serious than I had anticipated. Ears that had all the appearance of containing strong germinable grains, failed in the test box; while the total percent of germination was much lower than the average for some years past. The seed ears in this test were harvested before freezing weather in the fall, and stored in a frost-proof room, with good ventilation. The conditions under which it was stored since harvested is certainly ideal, and I cannot believe that the poor results in the test box can be credited to any faulty methods in storage. I lay them to the extraordinary weather conditions, beginning with the killing frost on September 14th, when the corn was yet in a more or less immature state. The leaves were completely killed, while the stalk was yet full of sap. With the leaves dead and dry after the frost, the sap was prevented from evaporating from the stalk and ear for a long time even after cut and shocked.

The weather remained warm and moist for nearly a month after the frost, resulting in many ears germinating and sending out a mass of sprouts under the husk. A large number of such ears could be found at husking time. No doubt the germs were damaged more or less in nearly all the ears, even tho no signs of sprouts were apparent. As these same weather conditions existed over a wide area of territory, the amount of good seed corn may be very scarce this spring.

If this same condition is widespread, it demands urgent attention. There is but one way to make sure that your seed will grow; and that is to test each ear separately by taking a number of kernels and planting them in a test box. Appearance of an ear is a very uncertain guide. This work must be done in such a manner that a record of each ear will be known. The testing of a number of kernels from a bulk lot of shelled corn will not do, for it is necessary to locate and reject the dead ears. In order to grow a maximum yield of corn on an acre, there must not be any missing hills. Seeds of strong vitality is one of the essentials to a good corn crop. With seed corn that is unusually low in vitality this year, it will pay well to test the seed. This work can be done during stormy days, before spring work begins.—H. E. Moats, Mercer Co., Pa.

PROGRESS IN THE PERRY COUNTY HILLS

Seldom does one find as interesting a rural community as that which lies about the village of Landisburg, back in the hills of Perry County. Here, rocked in the lap of generous natural resources, are a people sturdy in make-up and generous in spirit. Very marked progress is realized there at present in the operation of one of the most successful High Schools of the state. The school, now only three years old, has some forty students in the high school work in addition to the children in the primary grades. The remarkably large class in the high school work is due to the friendly co-operation of the village and country in the determined effort to have there a central educational institution second to none in rural communities.

Rev. Materniss, who is one of the local pastors, preaching at three appointments per week, is also supervising principal of the school and teaches constantly and we know very efficiently—a dual professional man. At a recent farmers' institute held there, with the entire school in attendance, he gave a peep into his vision of the school of the future in the title "When We Are a Full Grown School." His portrayal was that of an optimist who's unselfish aim and effort must result in great good for the locality, every individual of which seems to be in harmony with the spirit of co-operation for better educational and cultural environment. There really seems to be none of those shrunken-up mortals standing around asking, "What is it going to cost." Here is a place where they are getting the "worth" of their money."—D. H. Watts, Clearfield Co., Pa.

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The Business of Farming.

By ARTHUR D. CROMWELL, Chester Co., Pa.

Farm management is a new science. Farm bureaus are new institutions which, with the money appropriated under the Leever bill, are to become powerful agencies for carrying the message of the scientists to the farmers. Heretofore the scientists and the agricultural press have emphasized the increasing of production, but farmers are to become intensely interested when the message to them concerns itself with increasing the net profits or what, in farm management, is called the Labor Income from the farm. As manager of a Farm Bureau I was repeatedly called to visit farms. The owner would say, "Here are my records and books, here is the farm, now tell me why I am not making more." Sometimes I could detect errors in management and sometimes I could suggest means of increasing the production of the farm. But the farmer would say, "There is Thompson or Jones. His farm is not producing more than mine, and yet he is making money and I am not." You see I lacked a standard. I needed some measure by which I could tell what that farmer ought to be making.

Fortunately, the men in the Bureau of Farm Management at Washington have just organized some statistics which, when published, will be one of the nicest and most far-reaching pieces of constructive agricultural economic work that this or any other government ever offered its farmers. As a basis of this study, 600 farms were visited and yearly reports gathered. Many other farms in other states were visited by other men in order to gather statistics to compare with the reports of the 600 farms. The farms are in a dairy section of Pennsylvania. Prices for feeds are higher than in the Middle West and prices for milk are but little higher. So that it is fair to say that most any farmer in the dairy sections of New York, New Jersey, Pennsylvania, Delaware, Maryland, or any other state near a large city can reproduce the same results on equal areas.

The studies will be published in bulletin form when we get to the other end of the red tape. For accuracy in this study, we take 370 farms which are farmed by their owners. This is done in the belief that owners are better farmers, as a rule, than renters. Let us examine the results of the 20 poorest-paying farms and then the results of the 20 best-paying farms and try to learn what makes the difference. Do not say that you have not time to go over these figures. Head work pays as well as hard muscular labor, and there are some important lessons here.

AVERAGE OF 20 POOREST FARMS

From 80 to 120 Acres. Average 99 Acres

Receipts		Expenses	
Potatoes	$103	Labor	$385
Wheat	113	Feed	146
Hay	244	Seeds	36
Other Crops	56	Fertilizers	102
Cattle	225	Livestock	172
Hogs	18	Machinery and Repairs	97
Poultry	84	Taxes and Insurance	87
Eggs	102	Miscellaneous	88
Milk	475	Inventory loss	93
Miscellaneous	170		
Inventory gain	93		
Total	$1,683	Total	$1,206

Capital		Summary	
Land and Buildings	$8,194	Receipts	$1,683
Machinery and Tools	459	Expenses	1,206
Livestock	1,055	Farm Income	477
Supplies	217	Int. on capital at 5 percent	501
Working Capital (cash)	105	Labor income	—24
Total	$10,030		

The average crop area was 56 acres; number of cows milking, 9.4 for 12 months in the year; percent of income from crops, 34; crop area per horse, 16.3 acres; number of horses, 3.7; receipt per cow, $48; working capital other than land and buildings, $1,835; crop index compared with 100 percent, 84 percent.

Now compare these unsuccessful farmers who actually gave $24 for the fun of farming, with twenty farmers who are making an income of over $2,000 per year and getting house rent, milk, eggs garden truck, fruit and much of their fuel in the bargain.

AVERAGE OF 20 BEST FARMS

From 80 to 120 Acres. Average area 101 acres.

Receipts		Expenses	
Potatoes	$400	Labor	$602
Wheat	245	Feed	408
Hay	335	Seeds	58
Other crops	89	Fertilizers	164
Cattle	360	Livestock	308
Hogs	105	Machinery and Repairs	311
Poultry	92	Taxes and Insurance	101
Eggs	159	Miscellaneous	155
Milk	2,238	Inventory loss	18
Miscellaneous	130		
Inventory gain	702		
Total	$4,855	Total	$2,125

Capital		Summary	
Land and Buildings	$9,480	Receipts	$4,855
Machinery and Tools	974	Expenses	2,125
Livestock	2,941	Farm Income	2,730
Supplies	399	Int on capital at 5 percent	697
Working Capital (cash)	153	Labor Income	2,033
Total	$13,947		

The average crop area was 63 acres; number of cows milking, 20; number of horses, 5; receipts per cow, $106.50; crop acres per horse, 12.6; crop index, 117; working capital, $4,468.

What lessons have we here? Certainly the size of the farm does not make the difference. The poor ones averaged 99 acres and the profitable ones but 101 acres. But it is very noticeable that the profitable farms are producing more, not in one line alone but in each and every line. Second, the profitable farmers are putting on more labor—$602 compared with $385. Third the paying farms are better equipped. It takes more capital to make a large labor income than the poorer farmers are using—$9,480 for the profitable farms against $8,194 for the poor farms. Fourth, the profitable farmers are not trusting "all in one bottom." That is, they are carrying well, a number of lines, altho the dairy does bring in about half of the gross income. A fifth inference is that the poorer farmers need better cows—they have an income of only $48 per cow against $106.50 on the better farms. From my personal knowledge of the farms, I have reason to believe that natural differences in the farms cannot account for the difference in labor incomes. The secret of success on the better farms is efficient equipment and general good executive ability in farm management.

DAIRYING PER ACRE AND PER COW

On the farm of J. H. Reichart, of Berks County, a dairy is conducted on an intensive system. Each acre is expected to produce sufficient roughage to sustain one animal, including the work horses and mules. Three silos are used, aggregating a tonage capacity of about 400 tons. Last year the average milk yield of the herd, including 20 heifers, was 6,740 pounds of 5 percent milk. This herd is composed of Jerseys and grade Jerseys, and a peep into the place will convince one that the owner is a close student of methods and management in every detail. His breeding between families and in line breeding demonstrates more than ordinary skill. Figuratively speaking, Mr. Reichart constantly has his eye on his herd and individual merit and tendencies and his finger on the pulse of profit and loss. He has intimate knowledge of each animal of the herd and knows a defect or blue ribbon point every time. The Cooper sales are attended annually where Jersey quality is studied, and today four bulls are on the place and three of these are of breeding age.

We find Mr. Reichart a past master on the market problem. Many of his patrons by extended courtesy have traced the milky way from the city of Reading back to the hills where they were seated to a banquet in the midst of clean and beautiful cows, the source of their milk supply. Formerly the milk was sold direct to consumers from the wagon at 8 cents per quart. Later the output is wholesaled at the same price and the fat content fixed at 5 percent, while the bottle caps still display the name or trade mark of the producer just as when he was the distributor.

Ninety percent of the farms in this locality are farmed by tenants, and in most instances there seems to be a damaging difference in the viewpoint of tenant and owner as to methods and management — the very factors that often contribute to success on the Reichart farm, such as the use of the silo or systematic breeding of the herd. To sum up, the Reichart farm has been in the family ownership for many years, since about 1739, and is dear to the heart of the owner, who is determined that its productive capacity shall increase under his stewardship. There is here no dependence in the local "Hex" (doctor) nor do hollow horn or "wolf-in-the-tail" delusions enter into the problems of the place. Neither is there undue stress on some one factor to the elimination of other links in the long chain of essentials. Fads and frills have no place here, just close careful attention to detail, a tracing from cause to effect in breeding, feeding and soil building, and a close study of the market end of the business.—D. H. Watts, Clearfield County, Pa.

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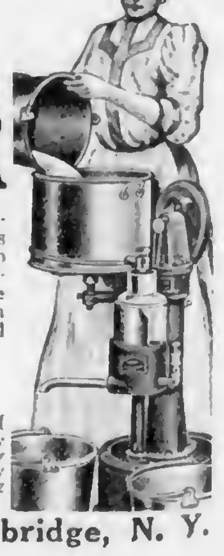

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AMERICAN SEPARATOR CO., Box 1062 Bainbridge, N. Y.

BY-PRODUCTS OF THE DAIRY

Dairy farming is one of the occupations in which profits are made only by narrow margins. Where milk is sold on the butter fat basis, the price received is often only five cents per pound more than the cost of the production. This would mean that the average cow from butter fat alone would net her owner only about 25 cents per week. Of course, the skim milk and sometimes butter milk is returned to the farmer.

The butter milk may be sold as a beverage. Much of the "butter milk" sold thus has never touched butter. When milk is separated the skim milk is mixed with one-two hundredth of its volume of whole milk and allowed to sour; then churned for a few minutes and strained. The whole milk gives it a fat content about the same as the true butter milk, and the remainder of the elements are about the same. This adulteration can not be detected.

Much skim milk and butter milk is marketed as cottage cheese. This is made in several ways, but all are alike to the extent that the milk must be soured and curdled by heat. Some people add rennet to the sour milk, but this is not required to make good cheese. The whey is strained off and the curd pressed into the mold used to print butter. On farms where poultry is kept, the skim milk is often soured and scalded by pouring boiling water into it; then strained and fed to young chicks, ducks or turkeys.

There is, in many cases, not enough demand for these various manufactured articles to use all these by-products, and where cheese is made, the whey is left. These by-products should all be retained and fed to pigs and calves. It has been shown that five pounds of skim milk have as much food value as a pound of shelled corn, or two pounds of whey have the same value when fed to pigs or calves. At this rate, skim milk would be worth about 25 cents per hundred pounds when corn is worth 70 cents a bushel, and whey is worth twice as much.

In some instances the skim milk has been fed to the cows that produced it. Experiments are being tried to find if colts can not be successfully raised on the mixed ground grain with skim milk. If such experiments prove successful, the dam will be able to work without the drain on her vitality caused by raising a colt. All skim milks should be pasteurized before being used as food for man or beast, and it should be used soon after separation and not allowed to sour.

If milk is sold to the creamery and the skim milk returned, it is always pasteurized by the creamery, for one does not get his own milk back, but only a pro rata share of all of it. The creamery dares not expose your stock or yourself to the diseases which your neighbor may have. When possible, all of the milk should be sold in forms edible by man, but where no market is near, it can be used as feed for live stock and thus increase the profits of the farm.—Howard Roudabush, Center Co., Pa.

BALANCED RATION FOR CALVES

A reader writes: "I am feeding my calves a little oil meal and blood meal with skim milk. Is this advisable? How long should I continue to feed skim milk?"

Oil meal and blood meal are both rich in protein; so also is skim-milk. Consequently when you feed these two feeds with skim milk you are not balancing the ration so far as protein and the carbohydrates are concerned. You have all the protein in the skim milk that the calves need and, in fact, more than they need. I should say that you would have a better balanced ration if you cut out the oil meal and the blood meal and simply fed the wheat middlings and skim milk.

I would feed a calf milk just as long as I had the milk to spare. Don't be afraid that it will hurt the calf, even if you feed him until he is a year or a year and a half old. There is no cheaper feed than skim milk. The trouble is to have enough of it so that you can spare it for calves after they get old enough so that they can get along without it very well. Some people feed skim milk to their cows and get good results from it. You can feed skim milk to any animal that you can educate to drink it, and get splendid results.—C. C. L.

GETTING ACQUAINTED FOR FUTURE WORK.

CORNELL DAIRY STUDENTS

The annual meeting of the Cornell Dairy Students' Association was held at the College of Agriculture, Ithaca, N. Y., Wednesday, February 11th, 1914. The meeting was one of the most successful ever held in the history of the Association, and a larger number of the former students were present than ever before. Over 50 new names were added to the membership of the association. An interesting program was given.

The following officers were elected for the ensuing year: President, Loran Isbell, Oswego, N. Y.; secretary, Roy C. Clark, Norwood, N. Y.; Treasurer, C. R. Owens, Freedom, N. Y.; College Secretary, H. L. Ayers, Ithaca, N. Y.

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The silo that's made of vitrified clay hollow blocks, each layer reinforced by continuous steel bands, and that keeps ensilage in perfect condition right down to the last forkful. Build a silo that will last all your lifetime and for several generations after you—a silo that never needs repairs or painting and that stands a monument to your good judgment.
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NATIONAL FIRE PROOFING COMPANY, Philadelphia, Pa.

Live Stock

PREVENTION OF NAVEL ILL OF COLTS

Navel ill is also known as joint ill, omphalo phlebitis, septic arthritis of sucklings, and pyosepticemia of the newly born. The many requests for information regarding this ailment of newly born colts indicate that it exists in many localities. The unfavorable outlook after the appearance of the disease, together with the fact that the disease when present requires the attention of a veterinarian, demands that the breeder should concern himself with its prevention.

This disease is caused by a micro-organism, and several bacteria have been suspected of being responsible for this malady. Every one of the suspected organisms is found abundantly in manure and objects contaminated with manure. The infective material gains entrance into the colt thru the open umbilical cord as a result of its coming in contact with litter, floors, or discharges from its dam contaminated by one of the organisms which cause the trouble. There are cases on record where the infection has taken place before birth, and while some investigators claim this method to be the principal mode of infection, still the prophylactic measures adopted to guard against the infection thru the navel cord have given good results in a large number of cases. Since infection before birth can not be controlled satisfactorily, we are justified for all practical purposes in preventing navel ill by guarding against the infection thru the cord at birth or soon afterwards.

Cleanliness of stables where pregnant mares are kept must be insisted upon. This is especially necessary where outbreaks of navel ill have been known to exist. Mares in the last stages of gestation should be placed in a box-stall which has previously been cleaned and disinfected. The bedding should be frequently renewed, and the external genitals and neighboring tissues should be kept clean and disinfected with a 2 percent solution of carbolic acid or 1 percent liquor cresolis compositus, or any other reliable disinfecting agent. Operations for opening abscesses and removal of afterbirths from cows should not be executed in the immediate vicinity of mares in an advanced stage of pregnancy.

The foal when dropped should be placed on clean bedding. In any event the cord of the foal should be washed in a disinfectant solution and tied at about one and one-half inches from the navel with a band or string which has previously been soaked in a disinfectant solution. The navel cord is then severed at about one-half inch below the band with a sharp pair of scissors and again disinfected. The ligature should, however, not be tightened until pulsation of the vessels in the cord has ceased. The stump of the cord is then painted with strong carbolic acid solution, tincture of iodine, or a mixture of equal parts of tincture of iodine and glycerin. The stump should be washed daily with a disinfectant and either painted with iodine mixture or carbolic acid, or dusted with some reliable antiseptic healing powder. The parchment-like dried stump may be cut off after five days and the naval wound washed with a disinfectant solution and dusted with powder until healed.

The cases of navel ill resulting from infection before birth can not well be guarded against. By keeping those mares which are advanced in pregnancy in good physical condition the fetus will be expelled immediately upon the opening of the uterine cavity. Once the infection of the navel cord has set in, the cord should not be ligated, but should be washed in a disinfectant solution and a veterinarian called for the subsequent treatment.—Dept. Circular.

THE COSTLY CUR

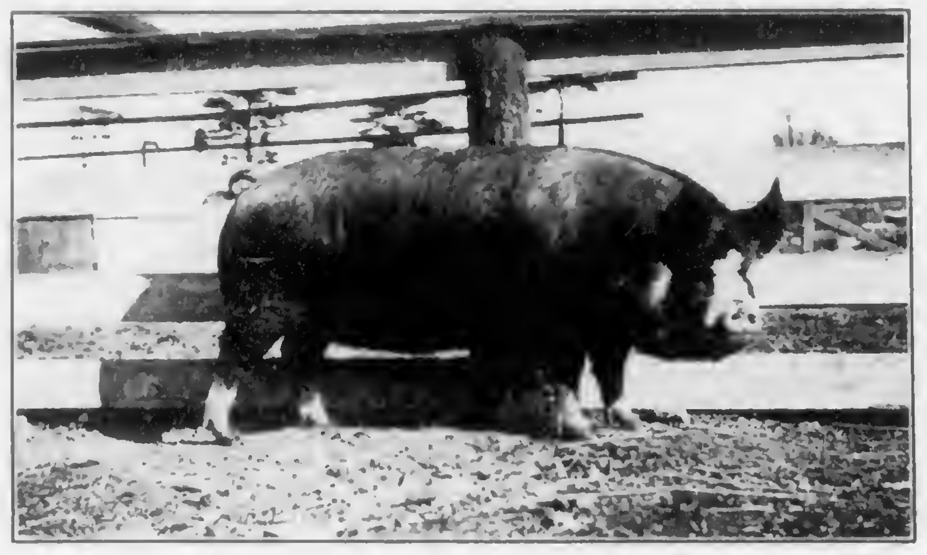
It is natural for people to be fond of pets. The affection of the dog for his master makes him the favorite pet of many. This is especially true of people who live in cities where the useful domestic animals can not be kept and so the city dogs multiply until they are an intolerable nuisance. They overrun the gardens, bury bones in the flower beds, dig up the lawns, tip over the garbage cans and cause frequent neighborhood quarrels on account of their frequent annoying depredations.

We hear frequent complaint of the high cost of living coming from laboring men and yet many of these men are boarding a useless dog the year round, at greater cost than that of one member of the family. Six hens could be kept at about the cost of keeping one dog, and they would at the same time return an income above their cost and make cleaner and fully as acceptable pets on which to lavish natural affection.

The sheep killed on the farms every year cost immense sums. Several years ago, I had a flock of fifty-six choice breeding ewes raided by two bird dogs and twenty-eight of them were killed in one night. We had the satisfaction of killing the dogs but that did not compensate for the loss of the flock.

I often hear farmers speak about "a good farm dog." The best farm dog I know of is the dead dog. The farm dog that does not cause more steps than he saves is so scarce that he is a curiosity. To be of any value to handle stock a dog must be trained and that demands more time and patience and skill than most farmers can devote to the work.

The damage to the sheep industry is not the most costly count against the dog. I know several families, mostly renters, who can ill afford it, who are never without from one to three dogs.—E. P., Beaver Co., Pa.



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NOTABLE SALE OF BERKSHIRES

An important addition was recently made to the Ellenwood Farm herd of Berkshires in the purchase of 20 head from the Blue Ridge Berkshire Farms. These 20 Berks had carried away the honors at several of the large southern fairs. Among the bunch were Collossal Premier, 139,691; Berks Princess, 179,014 (shown in illustration on this page); Blue Ridge Daisy 2nd, 179,020, and Blue Ridge Stumpy, 160,069. This blood traces back to such notable individuals as Lord Premier, 50,001; Longfellow, 16,835, and Masterpiece 77,000. The purchase represents the cream of the Blue Ridge Berkshire herd, and every Pennsylvania breeder will be glad to know that it has come to this State.

Agricultural Display at Panama Fair.—The farmers of New Jersey will have a display at the Panama-Pacific Exposition next year, but just how large a fund will be available for this purpose is not known as yet. Heretofore, the agricultural interests of the State at similar expositions have been slighted in favor of the manufacturing industries.

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The Culture of Bush Fruits.

By Prof. W. B. NISSLEY, Pennsylvania State College.

The growing of bush or small fruits such as strawberries, raspberries, blackberries, currants, and gooseberries has been neglected to some extent by Pennsylvania growers. The opportunities in this state are much greater than one at first realizes. Here we are in Pennsylvania with between six and seven million people within its boundaries, next door to New York with about nine million population, together making about one-sixth of the population of the United States. In fact we have the best markets in the world at our doors. One might say that our perishable bush fruits cannot be shipped to other than local markets, yet if Oregon is selling strawberries on the Chicago markets and Florida is shipping strawberries to Pennsylvania and New York, we can surely reach almost any part of Pennsylvania with the perishable small fruits under modern means of transportation.

The soils in Pennsylvania in general could not be improved upon for the production of our small fruits which accounts for them growing wild over our hill sides. If one will study the markets of our large cities and especially those of our smaller ones, one will find that the supply is very limited in proportion to the demand. I am glad to say however, that the growing of small fruits has increased in extent and has greatly improved in methods during the past few years, probably due in part to better shipping facilities, improved varieties, and a better knowledge of growing and handling the crop. The labor is light, the investment need not be large, the returns are quick, and no other crops are more certain. The most important things to be remembered in producing small fruits are to locate in a section reasonably safe from killing frosts, where moderate-priced labor of the proper kind may be available at certain seasons of the year, convenient to a local market or shipping point.

Probably one reason why the small fruit industry is not very popular, is on account of the care that should be given the plantation during all seasons of the year. Many growers are apt to neglect pruning or culture at some time or other, which will soon spell failure.

I will confine myself to raspberries, blackberries, currants, and gooseberries and omit strawberries at this time as that is a very important subject in itself and cannot be justly treated with the rest.

Raspberries (both red and black) and blackberries, can be treated under the bramble fruits. In planting bramble fruits the first thing to be considered is the location or site, and the soil. It might be said in a few words that land that will produce good farm crops will produce bush fruits. The soil does not need to be very rich as many people suppose; in fact, too rich a soil is not best as the growth will go to stalk at the expense of fruiting. A well-drained soil is very important yet not a dry soil. The soil should have enough humus in it to hold moisture a long time. One will find that the wild berries do best where they are grown in partly shaded conditions, and that dry soils and the direct burning rays of the sun are injurious, tending to produce small, dry, withered berries. Gentle slopes are very good provided the soils are not too dry or sun's rays too direct. The air is usually very good on such slopes. In the bottoms the soils are usually richer but frosts are more likely to settle. Red raspberries will ordinarily prefer the lighter soils that are not too rich, while the black varieties and blackberries prefer deeper, richer soils as they are heavier feeders.

Stable manure is undoubtely the best fertilizer as humus must be incorporated in the soil to hold moisture, or a mulch of some kind must be maintained. If manure is used no nitrogen fertilizer need be applied. One should also be careful that too much nitrogen is not applied in the manure especially with red raspberries. Black raspberries and blackberries will stand more nitrogen. Very little commercial fertilizer need be applied. Potash seems to be the important element next to nitrogen. A good proportion is as follows: potash 100 lbs. per acre in either the muriate or sulphate form or as wood ashes; cover crops or manure for nitrogen, or if these are not used, 100 lbs. of ni

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trate of soda or 125 lbs. of dried blood can be substituted; and for phosphoric acid 250 lbs. of floats or 150 lbs. of acid phosphate. These amounts can be varied according to soil conditions, but it can readily be seen that the application should not be too heavy.

Red raspberries are self propagating by means of shoots or suckers. These may be reset when young and at any time that it is convenient, provided they are not transferred far. If they are shipped they should be taken out during the fall or early spring. Never pull the young plants but dig them so that they will not break off. They may be planted in rows or hills. When planted the former way they are usually set 3 feet apart in the row with the rows 5 feet apart, and when the latter method is used they are ordinarily set 4x4 feet or 5x5 feet. Great care must be taken to keep the excess suckers destroyed either with a hoe or by cultivation. If this is neglected the stalks will become too numerous and spindly and will not fruit.

Blackberries are propagated by tip layering. The tip of a cane is buried which soon takes root and forms a new plant. By burying the whole cane a number of stalks can be propagated from the same cane. The small stalks may be planted in either fall or spring but are preferably healed in, protected over winter and planted early in the spring.

The pruning problem is an important one. With black raspberries, and blackberries the young shoots that come up in the spring should be tipped when about 30 inches high for black raspberries and 4 or 5 feet for blackberries, so that laterals will grow the same season. The next spring these laterals should be cut off from 8 to 12, or 14 inches from the stalk; this will make a stiff support for the fruit, which will be born on the laterals. Then after fruiting, cut out the old canes close to the ground and burn them so as to prevent the spread of disease.

One must remember that in bush fruits the stalk is grown one year; it fruits the next year and then it is useless. With red raspberries it is a question whether the young cane should be topped or not. Most growers do not summer prune this type as it has a tendency to produce more suckers when tipped, and the laterals do not mature sufficiently in the fall to winter over properly. With red raspberries, the important prunings are to keep down the excess suckers and cut out the old canes after fruiting.

Constant tillage from early spring until fall must not be overlooked; this is very important for several reasons: (1) For conserving moisture, especially about the time the berries are enlarging and ripening; (2) For releasing plant food, or making the fertilizing elements in the soil more easily available to the plant; (3) For destroying suckers in the case of red varieties.

A raspberry or blackberry plantation will be profitable as long as you take proper care of it; ordinarily they are renewed at from 4 to 8 years, due to disease and insects becoming troublesome. Yet they may be profitable for 12 to 15 years.

Currants and gooseberries are very similar in all respects; hence can be treated together. They will grow on poor soil, but will respond quickly to good treatment and to be profitable should be on a fairly rich soil, rather heavier than for raspberries. They are heavy feeders, hence will require a heavier application of fertilizer of the same nature as raspberries. They can be propagated most conveniently by taking hard wood cuttings 6 to 8 inches long of well seasoned, one-year old wood in the fall. These are buried several inches deep with the large end up in order to callus or heal over properly; they may then be planted or stored away in damp sawdust or sand, and under a low temperature until spring, when they should be planted early. Prune so as to leave from 6 to 8, or sometimes more stems to a stalk and practice a gradual renewal of the plant. In this way the plantation should be good for 8 to 12 years. They are very hardy and will endure the most severe winters.

All persons growing small fruits are especially interested in the returns. A good yield from a well cared for acre of red raspberries should be 140 bushels or 4,480 quarts, which at 12 cents a quart would amount to $537.60; of blackberries, 150 bushels, 4,800 quarts at 12 cents, $576; of currants, 350 bushels, 11,200 quarts at 12 cents, $1,344; of gooseberries, 400 bushels, 12,800 quarts at 12 cents, $1,536. If 12 cents a quart is too high for some localities, estimate at 10 cents or even 8 cents and the returns will still be quite large. Last year large canneries paid $100 a ton for currants and gooseberries which is about 10 cents a quart, wholesale.

The harvesting problem is the difficult one and in the case of gooseberries a cranberry picker would be a great labor saving device. Varieties to be planted will depend upon your particular condition with particular reference to climate, soil and market. The most profitable varieties, under general conditions are as follows:

Red Raspberries: Cuthbert, Columbian, London, Turner, Marlboro. Black raspberries: Cumberland, Gregg, Kansas, Eureka, Conrath, Mammoth Cluster, Older. Blackberries: Snyder, Taylor, Agawam, Eldorado, Rathbun, Erie, Early Harvest. Currants: Red Cross, Perfection, Victoria, Fay's Prolific, Pomona, Varsailles, Cherry. Gooseberries: Downing, Houghton, Columbus, Chautauqua, Industry.

STRAWBERRIES

Small fruits are an ideal intercrop for the growing orchard and are very profitable as well.

Soil requirements are similar to that of apple trees and with the constant cultivation which is necessary for success, no extra work of this kind need be done in the orchard. The minimum distance of intercrop from the young trees is 4 feet.

The soil should be rich in nitrogen and the mineral elements, and should contain plenty of humus. The humus in the soil is one of the greatest aids in maintaining abundance of moisture. Stable manure with the addition of a small amount of some phosphate fertilizer is the best. It should be applied at the rate of 5,000 to 10,000 pounds per acre. With the exception of a pure sandy or heavy clay soil, small fruits will thrive on any soil.

Harvesting the small fruit crops is usually a difficult proposition. In sections where there is plenty of cheap labor, especially foreign women, this problem is minimized.

Strawberries.—An acre of strawberries will bring 3000 quarts if taken care of, and considerably higher yields have been known. Because of susceptibility to frosts, strawberries are not a sure crop in Pennsylvania, but if well mulched in the fall as they always should be, the blossoms can be held back as much as three weeks. Use pedigreed plants. A little observation will show that there is a great deal of difference in the bearing qualities of individual plants and this apparently plays a large part in determining the bearing qualities of strawberry plants.

For commercial purposes spring is the only time to plant. If fall planting is done some plants will be killed off. Put the plants out as soon as the ground can be worked and is warmed up. Prepare the field as if for a garden. Nothing is gained by setting the plants in cold soggy ground, as growth will be retarded more effectually in this way than if the plants are set later.

The matted row is best and the best distance is 12 to 15 inches apart in rows 4 feet apart. Set the plants so that the crown is just even with the surface. If the crown is covered the plant will surely die and if too shallow the plant will dry out and will not grow well.

Get into the field with the cultivator and hoe as soon as they are set and keep a dust mulch without interuption the entire season. Under average conditions, one man can take good care of an acre of strawberries but it will keep him busy.

At the end of the season, there should be about one foot space between the unbroken matted rows. Allow each plant to set from 5 to 8 plants, cutting off the rest with the hoe. A pinch of nitrate to each plant will often produce a rapid healthy growth, and is advisable if the foliage is light colored. A spoonful of wood ashes around each plant may be used to advantage also. The idea is to make the plants grow as rapidly as possible until the rows are perfect. In no other way can a maximum crop be obtained. The second season there will be a full crop.

The worst pests of the strawberry are cut worms and leaf spot. Never plant in a sod ground. Clean cultivation for a period of one to two years will generally free the soil of the cut worms. Bordeaux or lime sulphur early in the season will prevent leaf spot.—H. G. Fassett, Wyoming Co., Pa.

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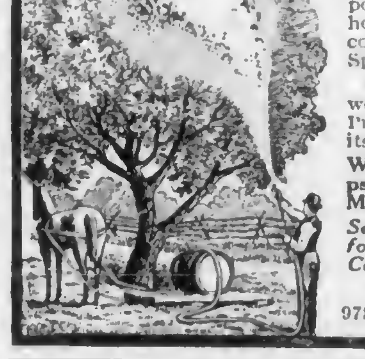

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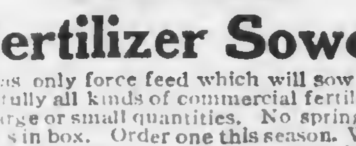

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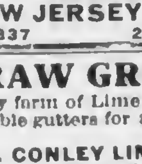

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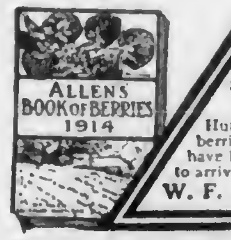

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Philadelphia, Pa., February 28, 1914.

A Municipal Market

The City of Philadelphia is preparing to make a practical test of the municipal market plan. The proposed system will provide a means for the farmers of surrounding producing sections to place their products directly before the city consumers with the intervention of but a single middleman or handler, and he being in the employ of the farmers. The plan, in brief, is to provide a market place to which the farmers can ship their goods, to be sold direct or by wholesale, as the growers may direct and the supply develops. The manager of the market is to be selected by the farmers and will work on a salary basis or sell goods on commission. The city will provide the market facilities at low rental, assist in gaining transportation facilities and maintain supervision over the management to prevent irregularities developing. The city is first interested in securing a supply of fresh, wholesome products for its people, and the plans contemplated provide for securing such products by opening a way for direct marketing from the farms. The success of the undertaking will depend largely upon the extent to which the farmers make use of the opportunity offered. This is a matter which might profitably be taken up by granges and other farmers' organizations. A representative of the city government may be secured by such bodies to present the plans and discuss organization of the work. The proposal ought to be of interest to every community seeking a better outlet for its farm products.

The Seed of Co-operation

The article on the first page of this issue carries valuable suggestions for every rural community. Too frequently co-operative movements are regarded as complex undertakings requiring elaborate organization. Progress in developing co-operative effort has been retarded by this misunderstanding of its requirements and purposes. There is much talk of widespread co-operation of farmers, but there can be nothing of the kind until there are more co-operative organizations like the one described in Bradford County. Farmers must learn to work and think and act together in the smaller things of every-day business of their own community before they will be prepared for or even attracted to more general co-operative work. The smaller, every-day needs must first be met, and in solving them the farmers will be preparing for united action in other things. What is described as having been done in Bradford County ought to be possible in hundreds of other counties of the state. The cow-testing association is so eminently practical and valuable in its accomplishments that it ought to appeal to every dairy community. The co-operative creamery, in spite of many failures in many sections, has advantages that mean profits where backed by the right sort of management and unity in its patrons. Co-operative buying of commodities staple in the community is the next logical step, and from this may be developed the community storage house, the community laundry and many other features which would meet the mutual needs and advance the mutual interests of the community. More power to the Bradford organization, and may it have many followers and imitators thruout the state.

Pure Linseed Oil

A bill now before the U. S. Senate provides for the prevention of manufacture or sale of adulterated or misbranded linseed oil. The importance of such a measure to farmers is readily apparent thru the use of linseed oil in the manufacture of paints and the use of oils in home-mixing of paints. An investigation made recently by one of the western states disclosed the fact that large quantities of linseed oil were being sold that were adulterated with petroleum and other cheap oils. Practically every state having pure oil laws has found such adulteration, and it appears that this practice is quite general, which may account for the deterioration in lasting quality of some paints. The states that are enforcing pure paint or pure oil laws have no supervision over such products in interstate trade. The new senate bill is designed to prevent the shipment of adulterated oil and will thus complete the control of the practice in all states. The bill specifically provides for the prevention of manufacture, sale or transportation of misbranded or adulterated linseed oil, for regulating traffic in such oil, establishing oil standards and providing for proper labeling. It is based upon the most effective features of several state laws and carries the endorsement of state officials who have been active in securing legal restrictions on the oil and paint trade. The measure, known as Senate Bill 4295, is now in the hands of the senate Committee on Manufactures, of which Senator George T. Oliver is a member. Farmers should urge their interest in this measure upon their congressional representatives. Farmers of this state should communicate with Senator Oliver as to their personal interest in the bill.

Winter Spray

Prof. Stevens, the Lehigh Valley Railroad Agriculturist, issues a timely warning against neglect of winter spraying. He reports evidence of spread and increased quantities of San Jose scale the past year. Stating that this spread may be due to the hot, dry season of 1913, he urges thoro spraying with lime sulphur this spring. Orchardists can not afford to be indifferent to this condition. The scale is known to have decreased in recent years because of the increasing practice of spraying, and possibly because of climatic and other influences. But this decrease should only encourage more careful spraying and closer vigilance. It is easier and cheaper to keep the scale in check by a continuance of proved methods than to subdue it again if it is permitted to regain the foothold it had a few years ago. This is not work for the large orchardists alone. The spraying should be done in all orchards. A few neglected trees in the community are a menace to all of the trees of that community.

Home Conveniences

Pennsylvania farmers are receiving considerable adverse advertising thru a story now going the rounds to the effect that a farm woman of the state recently broke down under the strain of excessive and useless farm work. The assertion is that this woman had been under the necessity of carrying coal from the barn to the kitchen for many years and finally broke down from overwork. When the husband was asked if there was any reason why a coal bunker could not have been provided near the cookstove and filled directly from the wagon, he replied that there was none, but that he had never thought about it. It is with no effort to excuse this farmer that attention is called to very similar examples of indifference to ordinary home comforts and conveniences to be found in thousands of homes in every state. How often one finds the family of a well-to-do farmer carrying spring water up a steep bank and from varying distances just because the family water supply has always been carried in such a way, because it is good water, and because the head of the family has never thought about the waste of energy and the inconvenience of it! An hydraulic ram might be installed for a few dollars and save all these steps for all the years to come, or a more extensive water system might be installed at a larger cost and provide a water supply to meet every demand of the home. The same condition of indifference to waste of time and energy is found in construction and grouping of buildings, placing and hanging doors and gates and arrangements for doing the things that must be cared for every day of the year in every home. The little remedy that might correct these errors at very slight cost is most frequently lacking because the people inconvenienced have "never thought about it."

STATE CAPITAL NEWS

Abandoned Farms.—The question as to whether Pennsylvania is making the most of its agricultural possibilities and whether farms are actually being abandoned is to be put to the test. The opportunities for cattle raising in Pennsylvania on such lands have frequently been referred to and a bulletin of the department of agriculture has pointed out these possibilities. People living in some of the northern counties, especially those where lumbering operations have been carried on and in some of the mountainous regions, have been asked to furnish the name and location of any farms which have been given up. The reasons for abandonment will be ascertained. It is believed that the neglect of soil study is to blame for much of the decline in products. Instances are known where fertilization has been given scant attention and farmers realizing that to build up land would involve so much expense have accepted small prices for properties and gone to towns to live. Definite information on the subject is to be asked.

Farm Counsellors.—The spring work of the farm counsellors will be started soon after the close of the farmers institute season early in March and providing the roads are in good condition it will be under way in April. Schedules are being arranged for economy of time and expense. Many requests seek advice on fertilizing and water drainage, these subjects being regarded as of prime importance.

New Land Damage Question.—A brand new land damage question, which may have a widespread effect, has arisen before the Public Service Commission in the shape of a complaint from a resident of New Ringgold who complains that the Philadelphia and Reading railway company's locomotives have damaged his land with cinders and asks that some steps be taken to compel the company to exercise greater care. For years complaints have been made about fires being started on farm lands and on woodlots thru sparks, and efforts to secure some legislative provision to check it have been taken time and again. The cinder proposition is one which everyone owning land along a railroad line can understand. The railroads have been making efforts to stop careless firing of engines which causes the waste and the farmers have been trying to prevent showering of fields with the dirt.

First Crop Report.—The material for the printing of the first crop report of the State made under the action of the legislature of 1913 in creating a bureau of farm statistics in the department of agriculture is about ready for the printers. It is the first instance of a systematic effort to gather first hand information about the farms of the state and what they yield. A list of farms was procured from assessors in each county and information about the crops was asked of responsible people in rural districts and small towns. An average of three in five persons addressed responded and the bureau was able to get a pretty comprehensive collection of data. The report will be issued during the latter part of the year.

Driving Out Bad Brands.—In an effort to show the need for a more drastic law covering state control of fertilizers the officials of the department of agriculture have made a number of arrests for the sale of fertilizers claimed not to have been correctly branded or of brands which were not up to the standards represented. In a dozen instances convictions were had but in others a chemical battle is on. If the state inspectors had authority to go to factories and go right into the examination of ingredients before they were burned or treated it would save the farmers of the state considerable money.

The Telephone Tie-up.—It begins to look as tho it will be many months before the State will be able to dispose of the proposition for a schedule of telephone rates thruout Pennsylvania. The proposition has developed so many angles that long study must be given. The independent companies with whose interests the "farmer lines" are more or less identified has adopted the same course as the Bell and demanded a hearing on the effect the arbitrary fixing of rates will have on business. Some of the rural lines can barely make ends meet on rates adjusted by local conditions.

Institute Work.—Attendance at the farmers' institutes this year, in spite of the condition of roads due to snow and the weather conditions has reached a point which may cause it to break a record. A careful effort is being made to secure accurate figures which will be laid before the next legislature in support of an increased appropriation. It is believed that if $10,000 to $15,000 could be made available for extension of this work and $10,000 more for movable schools be given, the benefits would be enormous. For years the institutes have been held on an appropriation utterly inadequate for needs and the success of the farm counsellors system has demonstrated that serious attention must be given to this line of work.

Hunters' License.—Just what the hunters' license law means is illustrated by the last computation of the income from that source made at the State treasury. In all 290,000 licenses have been reported with probably 20,000 more not yet reported. The amount paid in was $261,000. Ten percent of the gross income was retained by county treasurers so that the amount given is net. People here think that about $300,000 will be realized for the state. Unfortunately the legislature neglected to make the necessary appropriation of this income to the game commission funds or for reimbursement of counties which pay bounties on foxes, weasels and other vermin, so that it must lie in the Treasury until the legislature of 1915 can reappropriate it. The same is true of the $700,000 turned in for automobile licenses from July 1 to date. Thus, carelessness in legislating deprives the people of the state of the use of almost $1,000,000, a large part of which could be used on the roads.

Investigate Barn Fires.—Deputies from the department of the State Fire Marshal are investigating a number of barn fires reported in the central section of the state due, it is believed, to tramps or firebugs. The record of fires in country districts is being very carefully kept and it is believed that the 1913 list will show that there are two or three groups of fires that occur in the rural districts. Green hay is a prolific cause, but there are also suspicions of firebugs.

No Agreement On Revenue.—As yet the fiscal officers and highway department officials have been unable to get to an agreement on the subject of use of income from automobile licenses and it looks as tho a court test would be necessary. This will mean a long delay and the consequent neglect of many important roads.—Hamilton, Harrisburg, February 23.

NEW JERSEY FARM NEWS

May Revive Sussex Fair.—It seems now to be a pretty well assured fact that the county fair of Sussex County, which was allowed to die a natural death a few years ago, may be revived. The property upon which the fairs were formerly conducted is to be purchased. It will be drained, graded, the old race track to be resurfaced, grand stands, barns and stalls for exhibition purposes erected, and foundations prepared upon which the various kinds of tents may be erected and the entire property fenced. The fair association will be incorporated.

Farmers May Establish Market.—The farmers of the five counties, Passaic, Essex, Union, Morris and Bergen, who market their produce in Newark are up in arms over what they consider bad treatment at the hands of the Aldermanic committee having charge of the erection of the new city market buildings. The farmers feed a population of over 700,000 people in Newark and its suburbs, and they claim that they are entitled to the very best consideration. Since ground was broken for the market, the farmers have been crowded out on the sidewalks, and they are now informed that no accommodations will be provided for them in the new buildings. Such being the case, they intend to furnish a market of their own. A committee has been appointed, consisting of one prominent farmer from each of the counties in question, with full authority to take whatever action is deemed best. An investigation will at once be made of the market in Providence, R. I., which is owned and operated exclusively by farmers. This market is one of the most successful in the country.

Trout Hatching.—Superintendent Hayford of the State fish hatchery at Hackettstown, announces that the 1,500,000 brook trout eggs from Wiseport, Pa., and the 90,000 rainbow trout eggs from Kalamazoo, Mich., have hatched, proving, he says, the special adaptability of the local waters for hatching purposes. Many streams in the state will be stocked with fish of the species named.

Fish and Game Bills.—Fourteen measures are already before the Legislature to change the fish and game laws of the state. Some are meritorious, while some are just the opposite. A joint resolution, which should be killed, asks Congress to repeal the law recently adopted which provides that migratory game and birds shall be deemed under the protection of the government. Another such resolution creates a commission, without pay, to revise the game and fish laws. Such a commission might greatly simplify the mass of game laws on the statute books, but ought not to afford less protection to fish and game. Two bills which deserve defeat are the ones repealing the gunners' license act of 1909, and the one making it unnecessary for a resident to have a license to hunt in his own county. Those that would strengthen the statutes are: Senate Bill 4295 making a license necessary for fresh water fishing as well as hunting, one license covering both; it is aimed against Sunday fishermen from other States; Senate 125, prohibits dogs running at large except during the open season; House 312, prohibits woodcock shooting in summer; House 313, repeals the act of last year which prevented farmers from killing skunks, foxes and other fur-bearing animals, and House 314, provides for a jury trial in fish and game cases where the penalty exceeds $10.

The Delaware Bridge Question.—The Pennsylvania Legislature has appropriated a sum of money for the purpose of carrying out the idea of free bridges over the Delaware. It is now hoped that the Legislature of New Jersey will make a similar appropriation in order that the idea may be carried out. The bridges that cross the Delaware are just as much a public highway as are the roads that traverse the States between which the river is a dividing line, and the people are entitled to the free use of them.

Seek Federal Road Aid.—A resolution has been introduced into the Legislature for the appointment of a special committee to visit Washington and take whatever action may be necessary to get for the State its share of the $25,000,000 to be expended this year by the National government on good road construction. The resolution recites that the share of New Jersey would not be less than $500,000. It calls for a committee of twelve members of the Assembly, including the Speaker, one member to be chosen from each Congressional district.

Tax Boards to Name Assessors.—Attorney General Westcott is preparing a bill at the behest of Governor Fielder for the simplification and improvement of the taxing conditions in the State, in accordance with the suggestions made by the Governor in his inaugural address. This measure provides for the appointment of assessors in the various taxing districts in each county by the county board of taxation. The assessors will have all the protection afforded by the civil service law. Heretofore, the assessors have been chosen by popular vote, and the result of this has been, that by remitting the dog and poll taxes of the otherwise non-tax paying element of the population, and by gross discrimination and partiality in levying the assessments on real and personal property, unscrupulous men have maintained themselves in the office for years, while those who paid the expenses of running the government were made to suffer.

Bill of Interest to Farmers.—Among proposed bills of general interest to farmers is that vesting in local boards of health power to regulate and license persons engaged in the sale or distribution of milk and cream, giving such boards power to grant or withhold licenses, prescribing a penalty of $50 for the violation of the provisions of the act and giving the officers and agents of the State board of health access to barns, stables, and any place where milk or cream is stored or had in possession for sale or distribution and further providing a penalty of $100 to be incurred by anyone who interferes with an employe of the State board of health in the performance of his duties. Another is that prohibiting the importation of cows over six months old for breeding purposes, unless such animals shall have passed a tuberculin test within six weeks before entering. In order to render clear the technicalities attached to a similar measure adopted last year, a bill has been introduced fixing standard dry measures for fruits and vegetables at baskets of 32, 20, 8, 4 and 2 quarts, and of small fruits at one quart and one pint.—D. T. Hendrickson.

MARYLAND NOTES

Farmers' Club Meets.—The Forest Hill Farmers' Club, of Harford County recently met at the farm of W. L. Tucker. The club passed resolutions endorsing a bill recently introduced in the legislature authorizing the selling of the Almshouse farm, located near Belair, also the $1,000,000 appropriation for Maryland Agricultural College. A bill which would require shipping tags in the nature of checks, to be attached to the milk cans, the railroads to be responsible for all cans not returned was condemned, because it was considered it would probably increase the cost of shipping milk at least two cents a gallon.

National Prize Winner.—A. B. Twining, of Harford County, at the recent National Corn Exposition at Dallas, Texas, won the sweepstakes prize of the eastern zone. Harford County Corn growers have put Maryland on the Corn Map of the world. Corn from Maryland at last Paris Exposition won the highest corn honors.

Protest Proposed School Bill.—Caroline County parents, 1,400 strong, have signed petitions asking their representatives in the legislature to oppose any bill that proposes to abolish rural schools and consolidate them with town schools.

Complaint Against Roads.—Petitions to the Finance Committee of the Senate and the Ways and Means Committee of the House of Delegates are being circulated thruout the state complaining of the condition of the roads which "are so smooth and slippery that they cannot be used by teams to haul produce to market without grave danger to man and beast." They want thoro investigation of roads laid down by the State Roads Commission before any further appropriation for roads is considered. They complain the roads are costing from $10,000 to $12,000 per mile, are veneered with Tarvia, oil and other chemicals so they can only be used by automobiles; while good stone roads are being constructed by the Highways Commissions costing between $4,000 and $6,000 a mile which both farmers' teams and automobiles can use satisfactorily.—G. O. B.

COUNTY NOTES

Wayne Co., Pa., (N.E.) February 4.—Has been very cold but warmer now. All kinds of livestock wintering well. Ice crop harvested. Prices good. Pork, dressed, 11½ cents; butter, 37 cents; hay, $16 per ton. New milk cows very high. Men cutting summer's wood now. Has been a very good winter for farmers so far.—E. W. Carl.

Ocean Co., N. J., (C.) February 4.—Weather fair and pleasant. Prices on cows are a little lower. Crops about same. Eggs, 33c doz.; butter, 33c; poultry, 15c. Fruit buds too forward for time of year. Strawberries showing up too plain. Frost about all out. Roads in fair condition for hauling. Some missed getting their ice.—C. M. Rorer.

Morris Co., N. J., (N.) February 4.—Warm, foggy. Winter wheat and rye looking good. Livestock in good condition. Cows and horses are high. Hens are beginning to lay some. Farmers are doing some repairing to buildings and cutting summer supply of fire wood.—Geo. F. Williamson.

Potter Co., Pa., (N.C.) January 31.—We have had a warm spell the last week. All livestock is looking good. Beef cattle are about all picked up. Pigs, 10c lb. live; chickens, 12c live; beef, 10@11c, dressed; butter, 35c lb; eggs, 35c doz; potatoes, 60c bu; apples $1 to $1.25 bu. Farmers are doing odd jobs, hauling produce to market hauling logs and wood.—Louis Zundel.

Steuben Co., N. Y., (S.W.) January 26.—Very cold, with plenty of snow for good sleighing. Live stock wintering well. All kinds of stock high. Springers from $50 to $90 each. Beef cattle high and scarce. Hogs dressed, 11c lb; potatoes, 60c bu, at car; butter, 35c lb; eggs, 36c. Farmers busy hauling logs, cutting wood and hauling hay and potatoes. Many holding potatoes for higher prices.—G. W. Rowley.

Crawford Co., Pa., (N.W.) February 13.—Twenty degrees below zero; has been moderate. Live stock wintering fairly well. Milk, $1.80 per cwt. for 4 percent; pork, 10c; cows high; eggs, 30c; butter, 28@30c. A few farms changing hands. Farmers' Institutes well attended; lectures good. Farmers putting up ice.—J. F. Seavy.

Lancaster Co., Pa., (S.E.) February 10.—Cold this week. There has been very little snow this winter. Coldest was 6 degrees below. Live stock is in good condition. Prices continue to be high. Wheat is looking fine. The mild open winter has allowed farmers to do much outside work. Some plowing has been done. Manure is being hauled out daily. Wheat, 92c; corn, 70c; oats, 44c; hay, $16; straw, $8; eggs, 35c; milk, $1.65 per hundred. Farmers are stripping tobacco. Some few have finished and delivered their crops. Prices have advanced slightly. It is selling at 8, 10 and 12c depending on quality. Farm sales are the order of the day.—J. Henry Haverstick.

Harford Co., Md., (N.E.) February 7.—Weather clear, and cool; have had a very open winter. Live stock of all kinds in good demand. Mules and horses bringing $200 to $250 each; cows, $75 to $80; calves, 10c lb; hogs 8c; chickens, 15c; eggs, 30c doz; butter, 35c lb. Wheat looking good, and prospects for a good crop. Owing to the open winter farmers, have a great deal of plowing done and are busy pruning fruit trees, hauling manure, etc.—D. G. Harry.

York Co., Pa., (S.E.) February 9.—Warm and greater part cloudy and rainy until February 8 when it got decidedly colder. Live stock prices are practically unchanged. Fowls, 14c; eggs, 24c butter, 33 to 38c lb; potatoes, 75c per bu; apples, $1.50 to $2 bu; tobacco, Havana, 12c lb; wheat, 93c bu; corn, 70c bu; oats, 47c bu. Farmers busy stripping tobacco, hauling manure, and doing odd chores about the farm.—Clarence D. Emig.

Montgomery Co., N. Y. (E.C.) February 10.—Mild; many blustering days but no severe storms. Stock of leading farmers looking well. Many lean cattle in some vicinities. Hay, $16; dressed pork, 12½c; butter lower, about 30c; eggs, 33c. Many farmers joined Dairyman's League. The League buys a $40,000 plant at Fort Plain. No farm work being done. Farmers' Institutes are largely attended. Granges active. Many large auctions this month.—John L. England.

Crawford Co., Pa., (N.W.) February 17.—Ground hog saw his shadow so we are having plenty of winter. Thermometer went 10 to 20 below zero last week. A great many good horses are raised in this section. Good fresh cows, $75 to $100; hogs about 8c; milk, $1.75; hay, dull, selling from $8 to $10; eggs, 28c; butter, 25c. Farmers Institutes thru this section this winter are exceptionally good. Very able speakers.—C. M. Potter.

Cumberland Co., N. J. (C.) Feb. 18.—Cold weather has put a stop to farming operations. About half of the sod ground was plowed during warm weather of last two weeks and farmers have taken advantage of the unusual weather and started other spring work. Harrowing sod before plowing is a new idea in this section and several are experimenting with it for the first time this season. About the latter part of this month many carloads of potato fertilizer will be carted by the farmers. Potato planting is generally begun about the 20th of March in this locality. Many public sales around the county. Cattle and hogs selling very high; horses moderate in price.—C. J. S.

Lycoming Co., Pa., (N.C.) Feb. 18.—Cold and snowy. Owing to extremely cold weather with no snow on ground wheat and rye looked very bad but we have about 20 inches of snow now. Roads are drifted, worst they have been for several years. Rural mail delayed and all kinds of business tied up. Most farmers shoveling snow and repairing damages caused by snow. A good many public sales advertised. Fresh cows more plentiful but no cheaper.—Clyde E. Hall.

Lebanon Co., Pa., (S.E.) Feb. 11.—Clear and very mild. Live stock is in good condition. Fall seeding seems to be showing up good at present time. Farm sales are held daily and live stock is fetching very good prices. Farmers are engaged in repair work, pruning orchards, and other seasonable work.—Wm. J. Bean.

LEGAL DEPARTMENT

Thru this department Pennsylvania Farmer will discuss general legal queries submitted to it by its readers. Questions involving unusual circumstances and of purely local or special nature can not be handled. This department is open to the free use of readers.

Grading—Obstructing Drainage.—Reader in Crawford County: "Have the road authorities the right to obstruct the outlet to my tile drain by grading the road?"—Yes. You can, however, recover damages for the injury to your property caused by the change of grade. There is an injury to your property for which damages can be recovered when its drainage is materially affected by the change of grade of street.

Sale Of Standing Timber.—Reader in Montgomery county writes: "A bought a farm from B, who had previously sold the timber to C. Can A hold the timber?"—A sale of standing timber under an agreement which expressly provides that the timber shall be cut at once or within a reasonably short time is regarded as a sale of personal property. If by the terms of the contract, however, no definite time is prescribed within which the timber is to be cut, or if the time prescribed is not reasonably short, the contract is regarded as a sale of an interest in land. Assuming that the latter is the state of facts, the sale of the timber to C must have been made by deed or contract in writing, and this deed or contract in writing must have been recorded in the office of the recorder of deeds for the county in which B's land was situated, either (1) within 90 days after the contract was executed, or (2) before the recording of the deed from B to A; otherwise A is entitled to hold the timber, unless before he purchased the land he had actual notice of the sale of the timber. If, on the other hand, the contract between B and C provided for immediate cutting of the timber, it was a contract for the sale of personal property, and probably C has the right to the timber. Apparently the question has not been definitely decided by the Pennsylvania courts. (We are not considering the possibility of fraud in the sale of the land to A. Also we are assuming that B did not reserve the right to the timber in his deed to A. If he did, A has no claim whatever to timber standing at the time he took title.)

Easement—Right To Flood Land.—"Can the owner of a dam which has caused water to overflow the land of a neighbor, claim that land and the wood which has grown on it, the neighbor having paid the taxes thereon for thirty-five years?—Isaac Wildrick, Hope, N. J."

He cannot. When land is flooded as the result of the operation of a dam owned by another, the owner of the land can recover damages from the owner of the dam for the the injury to the land. But if the dam has caused the flooding of the land continuously for twenty-one years (twenty years in New Jersey) the right to damages is lost, and the owner of the dam acquires what is known as a prescriptive right to the easement or right to flood the land. He has, however, no title to the land or to any wood which may be growing on it. The title is still in the original owner, subject, however, to the easement or right of the other to flood the land to the extent to which it was habitually or usually flooded during the twenty-one years (or twenty years in New Jersey).—G. G. & H.

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Poultry

REARING OF CHICKS

Of the problems in poultry keeping, the rearing of young chicks is one of the greatest which confronts the poultry world today.

Time after time the poultry keeper has good success in hatching the eggs, but after a good hatch he fails to rear on an average of from 60 to 75 percent and in some cases fails to rear even 50 percent. To be sure we have many poultrymen who have made a careful study of rearing chicks, who are very successful, but on the other hand there are thousands of farmers and poultrymen who raise chicks artificially where the mortality runs as high as from 20 to 60 percent.

A GOOD TYPE OF BREEDER SHOWING STRONG CONSTITUTION.

The question arises then as to the cause of such high mortality in the rearing of the chicks. Do the poultry raisers fail to grasp and understand the fundamental principles for the best results in rearing chicks? There are several factors which may generally be considered for the best results. These are parental influences, surroundings, and artificial circumstances.

Dr. Hadley of the Rhode Island State College says that "Disease is not, strictly speaking, caused by micro-organisms. In most instances, whether in human beings or in chicks, disease is due as much to a weakened vitality as to outside infectious agents or materials." Disease then is merely an offset to the normal condition of the chick's body and this offset is caused either because the vitality is too low or because some outside stimulus is too strong. With the vast amount of work which our experiment stations have done, and are doing upon the subject of rearing chicks, very little is as yet known concerning the true causes for such mortality.

SELECTED EGGS FOR HATCHING. NOTE UNIFORMITY OF SIZE AND SHAPE.

However, there are methods which, if carefully observed, will lessen the death rate in rearing chicks. The first important principle which every poultryman must adhere to is that of selecting his breeding stock. His breeding stock must have a strong constitution and be bred from strong, healthy males and females. Having good foundation stock the way to success will not be so discouraging.

The next important point is the place for the hens to stay in or the home for the hens. A house large enough to give the hens plenty of room, four square feet of floor space per bird, is sufficient. The house should be well ventilated, free from dampness and filth, and should be well lighted, and disinfected with some reliable insecticide.

The feed of the breeding stock should be clean, sweet, and wholesome and easily digested.

The eggs should be gathered often enough so that they will not be chilled, and should be kept in a room where the temperature is about 50 or 60 degrees Fahrenheit.

The incubator should be placed in a room where the temperature varies but little. This room should be kept clean and should be kept free from odors by good ventilation, etc. The incubator should be one of the standard makes. In buying an incubator secure one that is easy to operate, that will admit fresh air and keep an even temperature. It should be cleaned out and disinfected after each hatch. A solution consisting of 4 quarts water to 1 quart creosote is good.

The incubator should be thoroly tested before placing the eggs in it. After it is found to be running satisfactorily the eggs can be put in. The temperature of the incubator should be kept as near as possible to 101½ degrees Fahrenheit for the first week, 102 for the second week and 103 to 104 for the third. The eggs should be turned from 36 to 72 hours after they are placed in the machine and cooled to blood temperature from the third day until the fourteenth day; and from that time they should be allowed to become a trifle cooler until the eighteenth day, at which time turning should be discontinued. The eggs should be cooled in the usual manner, however, until the first egg is pipped excepting to open the trap in the tray so that the chicks may fall into the nursery.

When the chicks are about 36 to 48 hours old they are ready to be placed in the brooder, which should previously have been cleaned and disinfected. Good clean litter such as cut clover or alfalfa should be used under the brooder for them to scratch in.

Any reliable make of brooder which will keep an even temperature, be easy to operate and conveniently adapted to any brooder house will answer all purposes. Top heat is preferable. It must be remembered that the chicks require good pure air, pleasant surroundings, sunshine, clean food, and pure water.

The temperature under the hover should be kept from 95 to 100 degrees for the first week or two and care should be taken that the chicks do not become chilled when removing them from the incubator to the brooder. A basket lined with cotton is very satisfactory for removing them. Chilling the chicks often causes bowel trouble in some form or another and frequently white diarrhea.

The chicks should not be fed until from thirty-six to forty-eight hours old because of the fact that the yolk serves as food for about that length of time. Sour milk has been found by the Poultry Department of the Connecticut Agricultural College to be a preventative for white diarrhea and should be before the chicks at all times for the first six or ten days. Sunlight and pleasant quarters and room to exercise are also important for the little chicks at all times. A little fine grit or oyster shell works wonderfully if fed to the chicks for the first feed because of the fact that it goes into the gizzard and helps mastication and digestion. Feed sparingly of grain and mashes and feed the chicks often. It has been found by experiments that feeding the chicks about six times a day for the first two or three weeks is more satisfactory than two or three times a day.

After the chicks are two to three weeks old the greatest danger of losing them is over but great care should be taken to keep them in a healthy condition at all times. After the first two weeks the feed can gradually be changed and four or five times a day will be astisfactory. All grain should be scattered in the litter so that the young chicks may be kept busy scratching for it.—D. E. Warner, State College, Pa.

LINSEED MEAL AS A POULTRY REGULATOR

Linseed meal is one of the best tonics that can be given poultry. Usually it is added to the mash food in the fall of the year, especially during the molting period, when it greatly assists in the shedding of the old coat of feathers and growing the new crop. Its analysis is similar to that of meat, and of late years many poultry men are using it in the daily mash.

Linseed meal is the residue left after flaxseed has been crushed and subjected to extreme pressure to remove the well-known linseed or painter's oil. The cake that is left is ground fine (to a meal), and, containing some oil and being rich in nitrogenous elements, it forms a rich and healthful food for poultry. The analysis is 30.9 percent protein, and 3 percent fat. Linseed meal, however, being of a fattening nature, should not be fed in excess. Used in too large amounts it is apt to bring on cases of looseness of the bowels, especially in young stock, while properly fed it will regulate the bowels, and thus keep the stock in a healthful condition. The writer feeds it in the proportion of 5 pounds to 100 pounds of ground grain and meat (the meat part being 15 percent.) This is given daily the year round, in the morning mash.

Dr. G. M. Twitchell, before the Massachusetts State Board of Agriculture, said that in his experience he found the best ration for market poultry to be 30 percent oats and wheat, 20 percent corn, and 10 percent linseed meal, all ground together, with 10 percent meat scraps added. This is mixed into a dough with skimmed milk and baked until thoroly cooked. It is then set away for a day or more, when it is pounded fine and fed. The doctor claims that linseed is one of the most valuable parts as it is rich in albuminous food, and hence is valuable in forcing growth.

A gill of linseed meal contains more bone-forming matter than a pint and a half of corn.—Boyd Michael, Atlantic Co., N. J.

VALUABLE FREE CATALOGS

Paints and Painting.—Most farmers know, and all farmers should know Ingersoll paints. They have been on the market for over 50 years and have held the endorsement of leading farmers' organizations for the past 37 years. A new booklet entitled "All About Paint and Painting" tells all about these paints and announces special discount prices good until May 25, 1914. The booklet is mailed free to all who write for it, addressing O. W. Ingersoll, 249 Plymouth St., Brooklyn, N. Y.

Farm Gates.—The old board gate has long maintained its popularity in competition with patented gates, chiefly because of its durabilty, quick repair and general adaptability. The new "Can't Sag Gate" combines these qualities with steel uprights which prevent sagging or dragging. The "Can't Sag Gates" are furnished complete or just the Can't Sag outfit, at prices within reach of all and on a 30-day free trial basis. A catalog giving complete description and details will be sent free upon request addressed to The Rowe Mfg. Co., 725 Adams St., Galesburg, Ill.

Strawberries.—The spring catalog of nursery stock issued by Leamon G. Tingle, 77 Railroad ave., Pittsville, Md., gives special attention to strawberries which are a strong specialty with this nursey. There are a great number of new and promising varieties listed in addition to all of the old standard sorts. The catalog is free. Write to the above address for it.

Bargain Book.—The new Bargain Book, just issued by The Charles William Stores, 1015 Stores Building, 115 E. 23rd st., New York City, contains 1100 pages descriptive of bargains offered in clothing, shoes, furniture, glassware, cutlery, carpets, rugs and, in fact, everything needed on the farm and in the home. Every article is guaranteed or money refunded. The book will be sent free upon request to the above address.

Farm Implements.—Catalog "S" recently issued by Rawlings Implement Company, Baltimore, Md., is a complete buyers' guide for everything in the farm implement line. It lists, describes and gives prices on practically everything that is needed on the farm and about the farm buildings. It is sent free upon request to the above address if you say you are a reader of the Pennsylvania Farmer.

Steel Plows.—A new catalog describing Cambridge Steel Plows lists a full line for every use. Among others are reversible sulky plows, hillside plows, reversible walking plows with hinged coulter and shifting clevis, left hand plows and shovel plows, with steel or wood beams; also disk and shovel hoe plows, and marker and guages. The catalog is beautifully printed and illustrated. It is free upon request to Cambridge Steel Plow Co., 712 Foundry St., Cambridge, Conn.

POULTRY.

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BREEDERS OF BRED TO LAY
S. C. White Leghorns,
White Wyandottes,
Imperial Pekin Ducks,
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Book your orders now for Hatching Eggs, Chicks and Ducklings.
Our Ducks are winners at Allentown, Hagerstown, Philadelphia and Baltimore Shows.
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SHOEMAKER'S BOOK on POULTRY and Almanac for 1914 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about Incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 1109 Freeport, Ill.

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Single Comb W. Leghorns
Best laying strain, vigorous stock. Eggs for hatching, $1.00 per 15; $3.00 per 50; $5.00 per 100. If 50 percent hatch is not secured they will be REPLACED AT HALF PRICE. Let us book your orders early. J. M. & C. C. McCURDY, Hartstown, Penna.

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Excel in beauty, quick development, easy keeping, egg production and profit. Eggs and chicks from high-class stock. Reasonable prices. Send for booklet.
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SINGLE COMB WHITE LEGHORNS,
Farmstead utility strain. Pullets lay at 4 1-2 months old. Breeding stock, hatching eggs, and day old chicks, Cockerels March hatched. Imperial Pekin Ducks, Afton Farm strain. Breeders and hatching eggs. Write for details to CAPE MAY FARMSTEAD, Cape May, N. J. Geo. O. Rea, Supt.

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In any quantity. Chicks 10c each. Eggs 5c each. Large, vigorous farm raised stock. True Leghorn type. Hot water Mammoth Incubators used. Is seven years experience worthy of consideration?
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Leghorns; White and Brown 15 Eggs postpaid, $1.15; 100 eggs, $4.50; 100 Chicks, $12.50.
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Mammoth Bronze Turkeys—Pure bred, healthy large birds. Our flock has always been free from black head or other diseases. Cir. for stamp. Irving Wheeler, Massena, N. Y.

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TAYLOR BROS., 40 Market St., Camden, N. J.

Farmers' Week at Cornell.

The 7th annual Farmers' Week at Cornell was probably the most successful that has so far been held. The general interest manifested by the practical farmers present gave evidence of appreciation of the many lectures given by some of the most prominent men in agricultural life. Everyone present remarked on the ease with which the large crowds were handled and the freedom from congestion. The official registration showed an attendance of 2,500 but many who came for only a day to hear some particular lecture failed to register. There were probably not far from 3,000 who came to get in condensed form the later ideas of prominent men in the agricultural field. A blackboard in a central building gave the time, place and speaker for each lecture and scores of students acted in the capacity of guides, keeping the crowds moving and giving information to strangers.

Beside most of the faculty of Cornell, there were many men from surrounding states upon the program. Pennsylvania was well represented by Dean Watts of State College, who gave a most instructive talk on "the vegetable forcing business." Space will not permit mention of all of the good things offered; the following three met with much favor.

Grass and Clover Sods.—Prof. Alva Agee, of the New Jersey Station talked on "securing heavy grass and clover sods." He pointed out that the best indication of real soil fertility is the presence of thick, heavy sod. The farmer is too apt to think of special fertilizers for corn, for oats, for potatoes, etc. This is one of the serious mistakes we are making in farming today. A general fertilizer is far more important than a specialized one since it tends to permanent fertility rather than a scheme whereby we take from it every possible ounce of plant food. A thin and poor sod is of no particular value in the furthering of a cropping system. A good sod is produced on a limestone soil, rich in phosphorus. These conditions prevail in the bluegrass region of Kentucky, and account for the exceedingly rich, heavy sods which are found in that section. If these conditions are not naturally present, we must put them there, by the abundant use of lime and phosphoric acid. Other things being right, these two factors will produce a rich sod.

Cover crops are good but do not do the lasting good that a heavy sod does, in that they do not carry with them the amount of organic matter which decomposes into humus. The physical properties of the soil must be good to get a good sod. Drainage must be sufficient and cultivation frequent enough to insure a good seed bed. Weeds are the great competitors of plants and hence every care must be given to relieve such a condition in the grass field. If the field is plowed and fitted in August the young plants will be able to get a good start before the weeds can grow. Fit the field as well if not better than for corn, so that all weed seeds in the first three inches of soil will be killed before the grass is sown.

As to the crop in the rotation which should have fertilizer, Prof. Agee says: "The crop which needs fertilizer most is that which gives humus." He bases this sound statement on the fact that it is that crop which tends towards permanent soil fertility. Hence it is the grass crop which must have fertilizer, and for worn heavy soils, he advised 3-10-6 goods, and for more sandy soils a 3-8-8, both to be sown at the rate of from 350 to 500 pounds per acre. Where timothy and clover are sown together, after the clover has run out and the field is straight timothy, it will be better practice to apply the fertilizer early in the spring as growth starts, and to change the analysis to 7-7-7, thus providing more nitrogen for the young plants.

Rural Citizenship.—Mr. Edward Van Alstyne, director of farmers' institutes in New York, gave a most valuable talk on "Rural Citizenship." He declared that agriculture depends not so much upon the character of the land or upon the season as upon the man, and since rural citizenship has as its purpose the upbuilding of man it is vital to the continued prosperity of agriculture. He decries the existing barrier between the city and the country and the passive antagonism which has existed between them. Both are essential to each other. Rural citizenship is essential to the welfare of our nation not only from the standpoint of agriculture but also because the national welfare is so vitally connected with it. The policy of taking abandoned land, remote from the centers of population, simply because it is cheap should be condemned. The farther away a man gets from these civilizing centers the greater tendancy to go backward. Isolation means devitalization, and every man needs civilization.

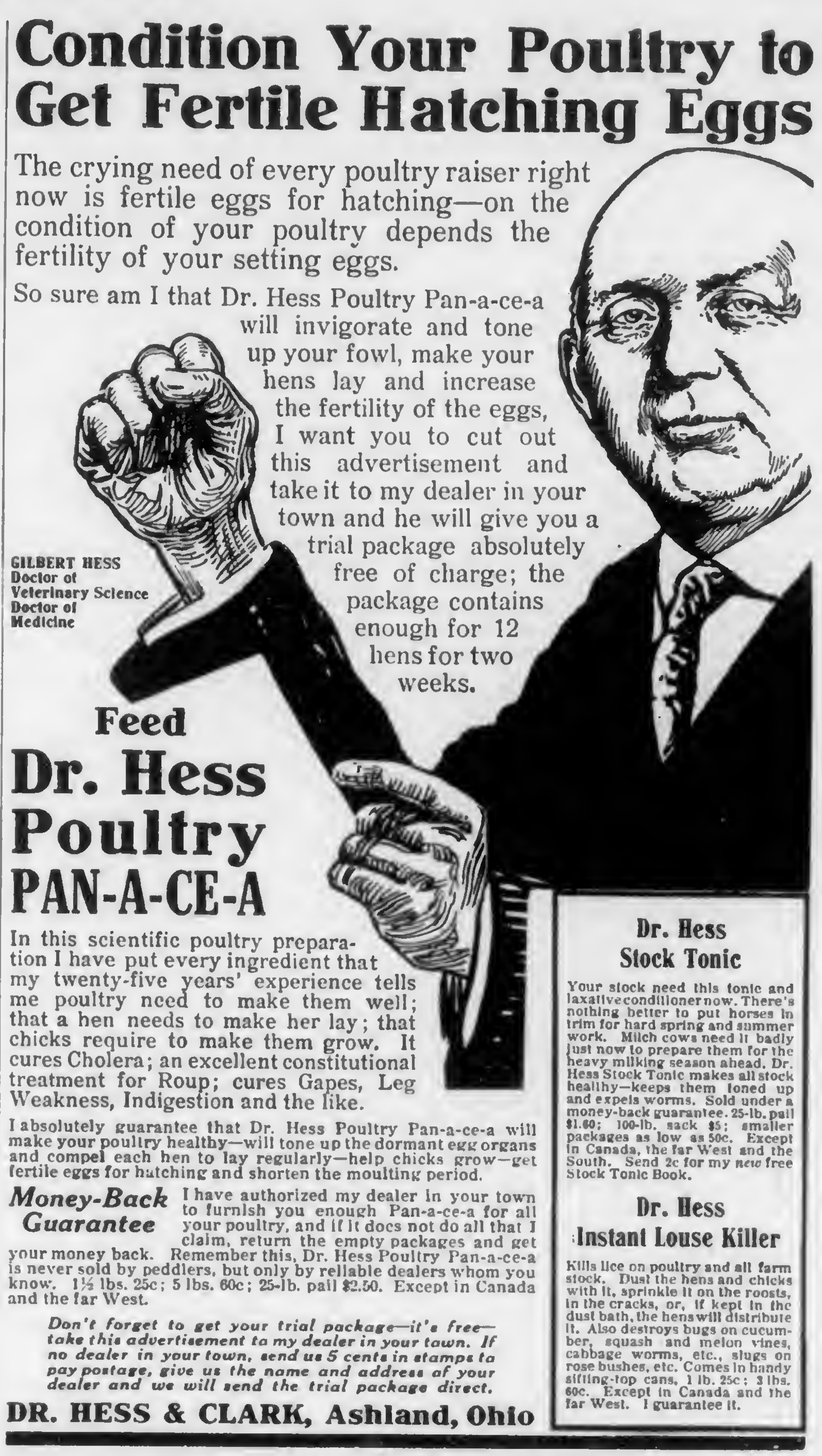
Mr. Van Alstyne pointed out the injury resulting from city men becoming inoculated with the farm bacillus. These men go into the country and by their failures depress farming in that particular section. To fight against this, Columbia University has opened an office, the function of which is to advise men anxious to invest in rural land and to start upon some agricultural venture. In the large majority of cases these men are discouraged, not because there is no room for them but because they have no special training. Men do not own land as they do live stock. It is merely left in their hands in trust. Rural citizenship calls for such use of the land as will make it better when turned over to the next person than it was in the beginning. This means good farming; good farming and rural citizenship go hand in hand. Mr. Van Alstyne strongly advised against buying cheap land in the hopes of building it up while getting a living from it. It is a long hard pull which very few men can weather, and in the end it will pay better to buy better land, even if more debt must be contracted.

Knotty Apples.—All lectures on horticulture were well attended. One of great interest was given by Prof. C. R. Crosby on "insects causing knotty apples." Under this group of insects Prof. Crosby classified the following pests: Codling moth, lesser apple worm, bud moth, fruit tree leaf roller, green fruit worm, red bug, plum curculio, apple seed chalsis and aphids. This is a formidable list of pests, but only two or three are not well known by the fruit growers and these may be controlled with effort and care. The red bug is, perhaps, the least familiar to most growers. It has done wide injury to orchards in a more or less restricted area of New York and adjoining states. When an apple has been stung by the red bug, it does one of three things; it may mummify, may exude gum from the point of attack, or it may continue to grow, in which case the resulting fruit will be badly deformed. The adult insect is a bug of brilliant coloring, being mostly red. It is very active and hence is hard to find unless closest observation is given. A great portion of the deformed fruit in eastern markets during recent years has been the result of the red bug, hence it is important that all growers become familiar with this pest and learn its control measures. To control the red bug, spray with a solution of Black leaf 40 diluted 1 to 800 when the fruit clusters are bursting. If necessary, repeat this application after the blossoms have fallen.

The apple seed chalsis has not received the attention from growers it deserves. The adult of this insect is a four-winged fly which lays eggs in the seed of the fruit. The adults also puncture the fruit, causing an injury much like that of the red bug, rendering the apple unfit for market purposes. Fortunately, only a comparatively few varieties of apples are attacked by this pest, of which the Lady is by far the most important. Since the larvae is inside of the fruit, sprays are of no avail. The only effective control measure is to gather and destroy all the apples that drop from the trees, for these are generally infested and contain the larvae.

The farmers who attended this meeting were keenly interested in what was going on, and there was a seriousness of purpose which spoke well for the future of agriculture. Another point which was the subject of much comment was the number of women who came to attend the lectures on home economics, vegetable gardening and floriculture. The lectures on these subjects were attended by women mostly. The success of this "Week" argues well for the continued advancement of agriculture in this and adjoining states. —A.

"For the land's sake, use Bowker's Fertilizers; they enrich the earth and those who till it."—Adv.



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In this scientific poultry preparation I have put every ingredient that my twenty-five years' experience tells me poultry need to make them well; that a hen needs to make her lay; that chicks require to make them grow. It cures Cholera; an excellent constitutional treatment for Roup; cures Gapes, Leg Weakness, Indigestion and the like.

I absolutely guarantee that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy—will tone up the dormant egg organs and compel each hen to lay regularly—help chicks grow—get fertile eggs for hatching and shorten the moulting period.

Money-Back Guarantee I have authorized my dealer in your town to furnish you enough Pan-a-ce-a for all your poultry, and if it does not do all that I claim, return the empty packages and get your money back. Remember this, Dr. Hess Poultry Pan-a-ce-a is never sold by peddlers, but only by reliable dealers whom you know. 1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail $2.50. Except in Canada and the far West.

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Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West. I guarantee it.

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gives 97 per cent efficiency; in some instances as high as 99 per cent; no other system can equal these results. Coal burning, self regulating, economical and safe. Heats Poultry houses and broods large flocks Small and large farms are using the Ideal with success. Investigate at once by sending for booklet describing the Merits, Economy and Effectiveness of the one best brooder.
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112-PAGE POULTRY BOOK FREE
If you are thinking of buying an incubator or brooder you should send for our big 1914 catalog at once. Describes many new, exclusive improvements in this year's PRAIRIE STATE Incubators and Brooders. Also contains about 60 pages of valuable poultry information—how to feed, rear and breed; treat diseases, poultry buildings, home grown winter feed, etc. Just out—a postal brings it FREE. Write today—now. [1]
Prairie State Incubator Co., 121 Main St., Homer City, Pa.

DRESSED POULTRY & EGGS WANTED
also Fresh Killed broilers and squabs.
Full Prices and prompt returns.
ARTHUR H. BONSOR,
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Ship Your Potatoes Now.
Nearly half of 1913 crop is yet in farmers' hands. Prices are good and we see no reason for high prices in the Spring. All inquiries promptly answered.
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Dressed meats, nuts and butter. Shipments solicited by JELLIFFE, WRIGHT & CO., 284 Washington St., and West Washington Market, New York.

Poultry and Eggs Wanted
A. J. M. MURDOCH & CO.,
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Parcel Post Egg Boxes NEW FLATS AND FILLERS.
Send 10c in stamps for same.
H. K. BRUNNER, 45 Harrison St., New York

Wanted—Honest, Energetic Men
in every county to sell our big line of goods direct to farmers. EXPERIENCE NOT NECESSARY. We fully instruct you. Farmers, laborers, mechanics, or any men willing to work can make
$1 000 to $3 000 a year
handling our big sellers. Exclusive territory given. We furnish you the capital; you furnish the team to carry the goods. Be your own boss in a pleasant, permanent and profitable business. Write at once for full particulars giving age and occupation.
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Potato Graders, 3 sizes—50 to 100 bu. per hour.
Pulleys, friction for separators, plain for shafting; all sizes.
Hay Hoists, double or single drum, with or without brake. Send for circulars.
LANCASTER PULLEY CO. Lancaster Pa.

Tells why chicks die
J. C. Reefer, the poultry expert of 1605 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr Reefer for one of these valuable FREE books.

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For Poultry is best. Coarse or fine granulated, also powdered. Buy direct from largest manufacturers of Charcoal Products. Ask for prices and samples Established 1844. MacKellar's Mills, Peekskill, N. Y.

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RURAL ROAD PROBLEMS

GIVE US DEMONSTRATION ROADS

Also Load and Tire Regulations

The editorial on "Road Demonstration" and the article on "How to get better roads," in the Pennsylvania Farmer of February 14th were most timely. The vote on the road bond issue did not signify that the people of the state did not want better roads, but that they wanted roads whose worth would be proportional to the money expended. Some state roads in this part of the state have not been improved since the state took charge of them. A state road which cost about $10,000 a mile a very few years ago was allowed to become so full of ruts that in places it was almost impassable for automobiles. This piece of road is just outside the largest town in Union County, and perhaps is the most traveled road in the county. Had this one piece of road, half a mile long, been repaired by laying several loads of stone on it last spring, the vote in this county would have been different.

Education in road making is the crying need today. Those who have charge of the township roads do not appreciate the value of the road drag; nor do they realize how good a dirt road can be kept if properly drained and then worked up after heavy rains and at the end of wet seasons. The work which Mr. Martin has done in the Department of Agriculture shows the disposition of the farmers. When they realize that there is something better than they now have they want it. On the road question, the farmer does not realize that anything better than he has been used to is possible. A demonstration mile, so located that it would represent fairly well county or township conditions, would be a great help in enlightening the community. When people know what they can have they will demand it from those who have charge of the road making.

Another need is a law which will regulate the size of a load which can be hauled on a wagon with narrow tires. In Ohio, where pikes have been constructed between all the large towns, the law regulates the size of the load and tire. The farmers in most sections are so anxious to keep the roads in good condition that if one should attempt to haul heavy loads on narrow tires he would soon be in the hands of the law, because he is injuring every man who uses that road. If, in addition to this, the front axles on broad tired wagons were made a little shorter than the hind axles, as is done in some parts of Europe, the road would be subject to continual rolling instead of cutting. The effect of this can hardly be estimated, especially if each driver should try to keep the road rolled smooth by driving on the high points instead of driving in the same rut in which those who went before him had driven.

When community pride is once aroused and each one who drives along the road tries to keep it in the best possible condition; it will not be so hard to keep the roads in a good condition. Carelessness on the part of those using the roads will account for not a little of the poor condition in which they are often found. Consideration for the other fellow is being urged as a leading motive in community life and in the industries. It should also apply on the farm and on the road.—W. G. Owens, Union County, O.

TWELVE-FOOT CONCRETE ROAD AT WHITEHALL, MD.

WASTE IN STATE ROAD BULDING

I have been greatly interested in the series of articles by Dr. McCaskey on the road question. What he says of the King road drag is applicable to the great majority of the roads in our state, yet on certain roads in our township, where there is continual heavy teaming of loads carrying about seven tons of raw slate material for the factories, another foundation is necessary. Six to eight years ago we built a number of roads at a cost of from $400 to $500 a mile. I will give the description of these roads in a later article.

In this article I want to confine myself to the five and one-half miles of road taken over by the State Highway Department. I want to say in the start that if the State Highway Department had given me the money it spent for surveying these five and one-half miles in my township I would have put them in first class condition, and in such condition that they would have cost less for maintenance then some of the $14,000 to $20,000 state highways. If the state highway will give me the amount of money it usually costs, ($14,000 to $20,000 a mile), to build the five and one-half miles of state highway in my township, I can put the 100 miles of road in my township in first class condition.

In the five and one-half miles in my township there is no heavy grade and the money spent for surveying was an entire waste. My experience is that the best surveyors are a pair of good honest pulling horses with a heavy load. They will soon tell where the grade is too steep. I cannot agree with the great cry of the State Department people that the township supervisors are no good, and that they only scrape dirt into the roads. This at least does not apply to the majority of the supervisors in my county and in the neighboring county of Lehigh, as a good many townships own stone crushers and dump wagons, (which I consider essential in good road building in this section) and have permanently improved the roads. This improvement has been due to a great extent to the agitation of the good roads movement.

I am convinced that if the same amount of money spent for surveying, office work and high salaried men, who do nothing, had been appropriated to the townships on a basis somewhat like the school appropriations, that a good many miles of roads would have been improved and undoubtedly some of them permanently. Our present system of building boulevards for the favored few and doing nothing on the most important roads is not right. The facts are that on the five and one-half miles of state highway in my township there is very little heavy traffic, while there is continual heavy traffic on about forty miles. The five and one-half miles could be put in first-class condition with very little expense as it needs very little grading. About three miles has been stoned, about one mile should be stoned and the balance needs very little work and could be coated with heavy gravel.

The position of the State Highway Department in being without funds is clearly its own fault. If it had not helped to defeat the Grabe tax bill, or better still the Benson bill, which proposed to tax all property on the same basis and which seemed to me the fairest bill of all, it would have had enough funds. As a member of the last legislature I am assured that the most important thing towards the improvement of highways is an honest system of taxation, and then there will be ample funds without anyone finding fault.—W. M. Benninger, Northampton Co., Pa.

Mitchell Little Six
$1895.00

Recognizing the fact that the modern farmer is as much of a *business man* as the merchant of the big commercial center, we call the former's attention to the *established truth* that the Mitchell car is an *investment* and in *no sense a speculation*. Not only is the car manufactured to last but its maintenance is economical—a fact that any man of business sense will thoroughly appreciate.

The principle of maximum power on minimum fuel is exemplified to a high degree in the Mitchell Models for 1914 and the strength of axles, frame, springs and other important features is calculated to resist successfully and repeatedly the severe strains and jolts and twists of rough country roads.

Such facts *must* be considered carefully to preserve an automobile as a daily utility and prevent it from becoming a costly luxury. Your Mitchell of today will be looking well and serving you faithfully several years from now and thus annually the cost of your original investment is decreased until it finally disappears.

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The Mitchell Little Six—fifty horse-power—132-inch wheel base—36x4½ inch tires—two or five passenger capacity - - $1,895

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The Mitchell Four—forty horse-power—four cylinders—120 inch wheel base—36x4½ inch tires—two or five passenger capacity $1,595

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Electric self-starter and generator—elecric lights—electric horn—electric magnetic exploring lamp—speedometer—mohair top and dust cover—Jiffy quick-action side curtains—quick-action rain vision wind-shield—demountable rims with one extra—tungsten valves—double extra tire carriers—Bair bow holders—license plate bracket—pump, jack and complete set of tools. Prices F. O. B. Racine.

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Household

FACTS ABOUT FOODS.—No. 2.

By Mrs. C. W. Foulk.

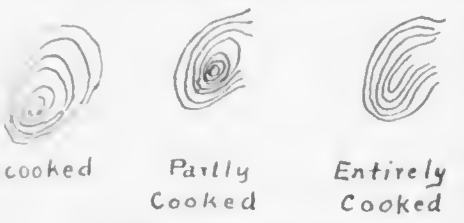
Starchy Foods

All starchy foods belong to the class of foods known as carbohydrates, and therefore energy and heat producers. Food obtained from grains, such as rice, all kinds of breakfast foods, cornstarch and flour, and many of the vegetables, as potatoes, sweet potatoes, etc., are largely starch.

If a raw potato is grated, put under the microscope and examined, it will be found to be made up of numerous small grains resembling the first degree in the accompanying diagram. The lines in this diagram represent thin layers of wood or cellulose, and the spaces between these layers of woody tissue contain the starch itself. All starchy foods are made up of these small starch grains, which while they differ slightly in size and shape, according to the plant from which they are obtained, are always formed of alternating layers of wood (cellulose) and starch. This woody layer is exactly the same material as the wood in bran or twigs, and we know that while some animals are able to digest young twigs and also bran, the human animal is not.

Cereals

Because of the fact that starch grains are so formed, all foods containing starch must be cooked long enough and in moisture enough to break these layers of wood and set the starch free.



A GRAIN OF POTATO STARCH.

For example, let us take the making of cornmeal mush. The mush will look done, and may even taste done long before all of the starch is sufficiently cooked to be digestible. The outer layer of the grains may be broken giving the mush the appearance of being done, while the inner layers are still uncooked. Cornmeal mush must cook at least three hours to render the starch digestible. A fireless cooker affords the best way of thoroly cooking cornmeal with little trouble.

It is always poor economy to save on labor and fuel at the expense of digestion, for not only will the digestive system be over-taxed, but in order to get enough nourishment more food will be eaten, because part of the uncooked starch will pass thru the body unaltered and be given off as waste without in any way nourishing the body. Even in rare cases where no injury is done by the eating of poorly cooked foods, they are, to say the least, extravagant.

There are many cereal preparations now on the market which have been wholly or partly cooked in their manufacture. Directions given on the boxes give the time necessary to complete the cooking. It has been found, however, that the time given is often insufficient to properly cook the starch in these, and it is always safer to allow a little extra time. There is no class of foods that is at present more extensively advertised, and all sorts of claims are made as to their merits. Some are advertised as brain foods, others as muscle builders, etc.; all of these claims are misleading, except in so far as any energy producing food, any carbohydrate, is a brain food; or as any protein food is a muscle maker.

Oatmeal, when thoroly cooked, is nutritious, for along with the large amount of starch which it contains, there is present also some fat (heat producer), some proteids (muscle builders) and some necessary mineral matter. Owing to the large amount of woody tissue it contains, oatmeal is somewhat laxative, and will be helpful to persons troubled with constipation. It is a hearty food, and those who eat much of it should live vigorous outdoor lives; much of it is a much better food for the farmer than for the student or the lawyer. If insufficiently cooked and given to young children it will often cause colic, gas on the stomach and rashes. Many a poor child has been blamed as a dull one in school when the real cause has been too much poorly cooked oatmeal for breakfast. The blood being in the stomach, it can not be in the head, helping the child to think.

Corn is also a wholesome cereal, for it contains fat and muscle builder as well as starch. Because of the large amount of fat it contains corn furnishes heat to the body as well as energy, and corn meal in various forms makes a good food for winter. Corn, as is well known, is fattening, and should be avoided by overly fat people.

Roasting ears or corn on the cob are not easily digested because of the toughness of the kernel husks, and often pass thru the body unaltered by the action of the digestive juices. For this reason green corn may cause indigestion and diarrhea.

Corn meal, like oatmeal, when properly cooked is quite digestible and like oatmeal it is slightly laxative. There are two kinds of corn meal, yellow and white; their food value is practically the same, altho it is generally thought that yellow meal is a little sweeter.

Cornstarch is almost entirely starch, the fat and muscle builder (proteids) having been removed. Cornstarch pudding makes a wholesome dessert for growing children.

Rice contains more starch than any other cereal, and it is in an exceedingly digestible form, and for this reason it makes a good food for children and people with weak digestion. Rice is a cheap food; it keeps well, and furnishes a large amount of digestible starch, and its use should be more general than it is in the northern part of this country. It must be kept in mind, however, that rice contains no muscle builder or fat, and so it is wise to serve it with some animal food, such as meat, eggs or cheese. Rice cooked with cheese makes a well balanced dish.

Wheat is the most important of our cereal foods, and because of its use as a bread-stuff, it will be considered in a separate talk. But a word about wheat as a breakfast food. There are many prepared breakfast foods made from wheat, and these are wholesome, nutritious and when cooked carefully are easily digested. The whole wheat grain, if washed and cooked until gelatinous, (this will take four or five hours—best done in fireless cooker), makes a good cereal food and is beneficial to people troubled with chronic constipation.

Macaroni is a wheat product. It contains more gluten (a muscle builder) and less starch than does flour. It is wholesome and easily digested, is cheap and keeps well. Macaroni should be used more widely by farm folks than it is at present. Many people think the more expensive imported brands much superior to the domestic brands, but when we consider that much of the imported product is made from American wheat, there seems to be little reason for thinking that there is any difference. The imported macaroni is white, due to its being dried in hotter sunlight of southern Europe, but American Macaroni is dried in a much more sanitary manner. Combined with cheese, macaroni makes a well balanced dish. Macaroni and tomato sauce is also a wise combination, as the tomatoes furnish salts and acids that are lacking in the macaroni.

Tapioca is a starchy food but not a cereal. It is the product of the root of the cassava, a tropical plant, our supply coming largely from the West Indies, altho it is now grown to some extent in Florida. Tapioca is almost pure starch and the starch granules are not tough, hence are easily digested. It makes a good food for children, and it is a safe food to eat in cases of diarrhea. Pearl tapioca is not tapioca, but is made from potato starch.

TIME TABLE FOR COOKING CEREAL FOODS

Kind	Amount	Water	Time
Steamed or Rolled Oats	1 Cup	1¾ Cups	30 min.
Coarse Oatmeal	1 Cup	4 Cups	3 hours
Rice	1 Cup	2¾ to 3¼ Cups	40 to 60 mins
Cornmeal	1 Cup	3½ Cups	3 hours
Hominy	1 Cup	4 Cups	1 hour
Whole Wheat	1 Cup	4 Cups	4 hours

Some Recipes For Cooking Starchy Foods

Abbreviations in the following directions are: c, cup; tbsp, tablespoonful; ts, teaspoonful.

Delicate Pudding (Cornstarch).—1 c water, 1 c fruit juice or milk, 6 tbsp (level) cornstarch, pinch of salt, 3 egg whites, 3 tbsp sugar.

Wet the cornstarch with a little of the liquid, stir it into the remaining liquid which has been heated, add the sugar and salt, cook 15 minutes, remove from fire, and add the beaten egg whites, turn into a mold which has been wet with cold water. Serve with cream and sugar, or with a boiled custard.

Tapioca Custard.—2 tbsp tapioca, 1 pt milk, yolks of 2 eggs, 1-3 c sugar, pinch of salt, whites of 2 eggs, ½ ts vanilla.

Cook tapioca in a double boiler in just enough water to cover it; when the water is absorbed add the milk and cook until the tapioca becomes soft and transparent. Beat the yolks, add the sugar and salt, pour the boiling milk over them, return to the double boiler and cook until it thickens like a custard. Remove from the fire, add the egg whites beaten to a foam, stir well and flavor.

Macaroni with White Sauce.—¾ c macaroni broken in inch pieces, 2 tbsp butter, 2 tbsp flour, 2 qt. boiling water, 1 tbsp salt, 1½ c milk.

Cook macaroni in boiling salted water for 20 minutes or until soft, drain in strainer, pour cold water over it to prevent pieces from sticking together, add white sauce made as follows: Melt 2 tbsp butter, add 2 tbsp flour and pour into this 1½ c scalded milk; cook 5 minutes.

Rice With Cheese.—Steam 1 c of rice, allowing 1 tbsp salt and 2¾ to 3¼ c boiling water; cover the bottom of buttered dish with rice, dot over with ¾ tbsp of butter, sprinkle with thin shavings of mild cheese and a few grains of cayenne pepper; repeat until the rice and ¼ lb. of cheese are used. Add milk to half the depth of contents of the dish, cover with buttered crumbs and bake until the cheese melts.

Cream of Tomato Soup.—Stew together in a saucepan one quart of tomatoes, one slice of onion, a few small red peppers, two or three cloves and part of a bay leaf. A stalk or two of celery can be added if liked. Boil for twenty minutes, then pass thru a sieve. Blend together over the fire two tablespoonfuls of butter and the same amount of flour. When cooked, add one pint of milk, stirring constantly. Season the tomatoes with salt, pepper and sugar while boiling. Just before combining the thickened milk and tomatoes add a half teaspoonful of soda to the tomatoes. Serve with crackers.

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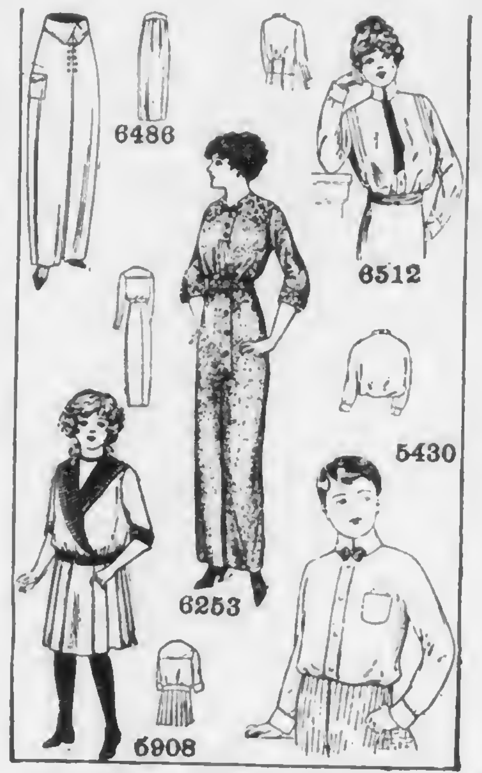

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXIII

Sergeant Stimson Confirms His Suspicions

It was late in the afternoon when Colonel Barrington drove up to Winston's homestead. He had his niece and sister with him, and when he pulled up his team, all three were glad of the little breeze that came down from the blueness of the north and rippled the whitened grass. It had blown over leagues of sun-bleached prairie, and the great desolation beyond the pines of the Saskatchewan, but had not wholly lost the faint, wholesome chill it brought from the Pole.

There was no cloud in the vault of ether, and slanting sun-rays beat fiercely down upon the prairie, until the fibrous dust grew fiery and the eyes ached from the glare of the vast stretch of silver gray. The latter was, however, relieved by stronger color in front of the party for blazing gold on the dazzling stubble, the oat sheaves rolled away in long rows that diminished and melted into each other, until they cut the blue of the sky in a delicate filigree. Oats had moved up in value in sympathy with wheat, and the good soil had most abundantly redeemed its promise that year. Colonel Barrington, however, sighed a little as he looked at them, and remembered that such a harvest might have been his.

"We will get down and walk towards the wheat," he said. "It is a good crop and Lance is to be envied."

"Still," said Miss Barrington, "he deserved it, and those sheaves stand for more than the toil that brought them there."

"Of course!" said the Colonel, with a curious little smile. "For rashness, I fancied, when they showed the first blade above the clod, but I am less sure of it now. Well, the wheat is even finer."

A man who came up took charge of the horses, and the party walked in silence towards the wheat. It stretched before them in a vast parallelogram, and while the oats were the pale gold of the austral, there was the tint of the ruddier metal of their own Northwest in this. It stood tall and stately, murmuring as the sea does, until it rolled before a stronger puff of breeze in waves of ochre, thru which the warm bronze gleamed when its rhythmic patter swelled into deeper-toned harmonies. There was that in the elfin music and blaze of color which appealed to the sensual ear and eye, and something which struck deeper still, as it did in the days men poured libations on the fruitful soil, and white-robed priests blessed it, when the world was young.

Maud Barrington felt it vaguely, but she recognized more clearly, as her aunt had done, the faith and daring of the sower. The earth was very bountiful, but that wheat had not come there of itself; and she knew the man who had called it up and had done more than bear his share of the primeval curse which, however, was apparently more or less evaded at Silverdale. Even when the issue appeared hopeless, the courage that held him resolute in the face of others' fears, and the greatness of his projects, had appealed to her, and it almost counted for less that he had achieved success. Then glancing further across the billowing grain she saw him—still as it seemed it had always been with him, amid the stress and dust of strenuous endeavor.

Once more, as she had seen them when the furrows were bare at seed time, and there was apparently only ruin in store for those who raised the Eastern people's bread, lines of dusty teams came plodding down the rise. They advanced in echelon, keeping their time and distance with a military precision, but in place of the harrows, the tossing arms of the binders flashed and swung. The wheat went down before them, their wake was strewn with gleaming sheaves, and one man came foremost swaying in the driving-seat of a rattling machine. His face was the color of a Blackfeet's, and she could see the darkness of his neck above the loose-fronted shirt, and a bare blackened arm that was raised to urge the tired beasts to their task. Their trampling, and the crash and rattle that swelled in slow crescendo, drowned the murmur of the wheat, until one of the machines stood still, and the leader, turning a moment in his saddle, held up a hand. Then those that came behind swung into changed formation, passed, and fell into indented line again, while Colonel Barrington nodded with grim approval.

"It is very well done," he said. "The best of harvesters! No newcomers yonder. They're capable Manitoba men. I don't know where he got them, and, in any other year, one would have wondered where he would find the means of paying them. We have never seen farming of this kind at Silverdale."

He seemed to sigh a little while his hand closed on the bridle, and Maud Barrington fancied she understood his thoughts just then.

"Nobody can be always right, and the good years do not come alone," she said. "You will plow every acre next one."

Barrington smiled dryly. "I'm afraid that will be a little late, my dear. Any one can follow, but since, when everybody's crop is good, the price comes down, the man who gets the prize is the one who shows the way."

"He was content to face the risk," said Miss Barrington.

"Of course," said the Colonel quietly. "I should be the last to make light of his foresight and courage. Indeed, I am glad I can acknowledge it, in more ways than one, for I have felt lately that I am getting an old man. Still, there is one with greater capacities ready to step into my shoes, and tho it was long before I could overcome my prejudice against him, I think I should now be content to let him have them. Whatever Lance may have been, he was born a gentleman, and blood is bound to tell."

Maud Barrington, who was of patrician parentage, and would not at one time have questioned this assertion, wondered why she felt less sure of it just then.

"But if he had not been, would not what he has done be sufficient to vouch for him?" she said.

Barrington smiled a little, and the girl felt that her question was useless as she glanced at him. He sat very straight in his saddle, immaculate in dress, with a gloved hand on his hip, and a stamp which he had inherited, with the thinly-covered pride that usually accompanies it from generations of a similar type, on his clean-cut face. It was evidently needless to look for any sympathy with that view from him.

"My dear," he said, "there are things at which the others can beat us; but, after all, I do not think they are worth the most, and while Lance has occasionally exhibited a few undesirable characteristics, no doubt acquired in this country, and has not been always blameless, the fact that he is a Courthorne at once covers and accounts for a good deal."

Then Winston recognized them, and made a sign to one of the men behind him as he hauled his binder clear of the wheat. He had dismounted in another minute, and came towards them, with the jacket he had not wholly succeeded in struggling into, loose about his shoulders.

"It is almost time I gave my team a rest," he said. "Will you come with me to the house?"

"No," said Colonel Barrington. "We only stopped in passing. The crop will harvest well."

"Yes," said Winston, turning with a little smile to Miss Barrington. "Better than I expected, and prices are still moving up. You will remember, madam, who it was wished me good fortune. It has undeniably come!"

"Then," said the white-haired lady, "next year I will do as much again, tho it will be a little unnecessary, because you have my good wishes all the time. Still, you are too prosaic to fancy they can have anything to do with—this."

She pointed to the wheat, but, tho Winston smiled again, there was a curious expression in his face as he glanced at her niece.

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Miss Barrington looked at him steadily. "Lance," she said, "there is something about your speeches that occasionally puzzles me. Now, of course, that was the only rejoinder you could make, but I fancied you meant it."

"I did," said Winston, with a trace of grimness in his smile. "Still, isn't it better to tell any one too little rather than too much?"

"Well," said Miss Barrington, "you are going to be franker with me by and by. Now, my brother has been endeavoring to convince us that you owe your success to qualities inherited from bygone Courthornes."

Winston did not answer for a moment, and then he laughed. "I fancy Colonel Barrington is wrong," he said. "Don't you think there are latent capabilities in every man, tho only one here and there gets an opportunity of using them? In any case, wouldn't it be pleasanter for any one to feel that his virtues were his own and not those of his family?"

Miss Barrington's eyes twinkled, but she shook her head. "That," she said, "would be distinctly wrong of him, but I fancy it is time we were getting on."

In another few minutes Colonel Barrington took up the reins, and as they drove slowly past the wheat, his niece had another view of the toiling teams. They were moving tirelessly with their leader in front of them, and the rasp of the knives, trample of hoofs, and leash of the binders' wooden arms once more stirred her. She had heard those sounds often before, and attached no significance to them, but now she knew a little of the stress and effort that preceded them, she could hear thru the turmoil the exultant note of victory.

Then the wagon rolled more slowly up the rise, and had passed from view behind it, when a mounted man rode up to Winston with an envelope in his hand.

"Mr. Macdonald was in at the settlement and the telegraph clerk gave it to him," he said. "He told me to come along with it."

Winston opened the message, and his face grew grim as he read, "Send me five hundred dollars. Urgent."

Then he thrust it into his pocket, and went on with his harvesting when he had thanked the man. He also worked until dusk was creeping up across the prairie before he concerned himself further about the affair, and then the note he wrote was laconic.

"Enclosed you will find fifty dollars, sent only because you may be ill. In case of necessity you can forward your doctor's or hotel bills," it ran.

It was with a wry smile he watched a man ride off towards the settlement with it. "I shall not be sorry when the climax comes," he said. "The strain is telling."

In the meanwhile Sergeant Stimson had been quietly renewing his acquaintance with certain ranchers and herders of sheep scattered across the Albertan prairie some six hundred miles away. They found him more communicative and cordial than he used to be, and with one or two he unbent so far as, in the face of the regulations, to refresh himself with whiskey which had contributed nothing to the Canadian revenue. Now the lonely ranchers have as a rule few opportunities of friendly talk with anybody, and as they responded to the sergeant's geniality, he became acquainted with a good many facts, some of which confirmed certain vague suspicions of his, tho others astonished him. In consequence of this he rode out one night with two or three troopers of a Western squadron.

His apparent business was somewhat prosaic. Musquash, the Blackfeet, in place of remaining quietly on his reserve, had in a state of inebriation reverted to the primitive customs of his race, and taking the trail, not only annexed some of his white neighbors' ponies and badly frightened their wives, but drove off a steer with which he feasted his people. The owner following came upon the hide, and Musquash, seeing it was too late to remove the brand from it, expressed his contrition, and pleaded in extenuation that he was rather worthy of sympathy than blame, because he would never have laid hands on what was not his had not a white man sold him deleterious liquor. As no white man is allowed to supply an Indian with alcohol in any form, the wardens of the prairie took a somewhat similar view of the case, and Stimson was, from motives which he did not mention especially anxious to get his grip upon the other offender.

The night when they rode out was very dark, and they spent half of it beneath a birch bluff, seeing nothing whatever, only hearing a coyote howl. It almost appeared there was something wrong with the information supplied them respecting the probable running of another load of prohibited whisky, and towards morning Stimson rode up to the young commissioned officer.

"The man who brought us word has either played their usual trick and sent us here while his friends take the other trail, or somebody saw us ride out and went south to tell the boys," he said. "Now, you might consider it advisable that I and one of the troopers should head for the ford at Willow Hollow, sir."

"Yes," said the young officer, who was quite aware that there were as yet many things connected with his duties he did not know. "Now I come to think of it, Sergeant, I do. We'll give you two hours, and then, if you don't turn up, ride over after you; it's condemnably shivery waiting for nothing here."

Stimson saluted and shook his bridle, and rather less than an hour later faintly discerned a rattle of wheels that rose from a long way across the prairie. Then he used the spur, and by and by it became evident that the drumming of their horses' feet had carried far, for, tho the rattle grew a little louder, there was no doubt that whoever drove the wagon had no desire to be overtaken. Still, two horses cannot haul a vehicle over a rutted trail as fast as one can carry a man, and when the wardens of the prairie raced towards the black wall of birches that rose higher in front of them, the sound of wheels seemed very near. It, however, ceased suddenly, and was followed by a drumming that could have been made by a galloping horse.

"One beast!" said the Sergeant. "Well, they'd have two men, anyway, in that wagon. Get down and picket. We'll find the other fellow somewhere in the bluff."

They came upon him within five minutes endeavoring to cut loose the remaining horse from the entangled harness in such desperate haste that he did not hear them until Stimson grasped his shoulder.

"Hold out your hands," he said. "You have your carbine ready, trooper?"

The man made no resistance, and Stimson laughed when the handcuffs were on.

"Now," he said, "where's your partner?"

"I don't know that I mind telling you," said the prisoner. "It was a low down trick he played on me. We got down to take out the horses when we saw we couldn't get away from you, and I'd a blanket girthed round the best of them, when he said he'd hold him while I tried what I could do with the other. Well, I let him, and the first thing I knew he was off at a gallop, leaving me with the other kicking devil two men couldn't handle. You'll find him rustling south over the Montana trail."

"Mount and ride!" said Stimson, and when his companion galloped off, turned once more to his prisoner.

"You'll have a lantern somewhere, and I'd like a look at you," he said. "If you're the man I expect, I'm glad I found you."

"It's in the wagon," said the other dejectedly.

Stimson got a light, and when he had released and picketed the plunging horse, held it so that he could see his prisoner. Then he nodded with evident contentment.

"You may as well sit down. We've got to have a talk," he said.

"Well," said the other, "I'd help you catch Harmon if I could, but I can prove he hired me to drive him over to Kemp's in the wagon, and you'd find it difficult to show I knew what there was in the packages he took along."

Stimson smiled dryly. "Still," he said, "I think it could be done, and I've another count against you. You had one or two deals with the boys some little while ago."

"I'm not afraid of your fixing up against me anything I did then," said the other man.

"No?" said Stimson. "Now, I guess you're wrong, and it might be a good deal more serious than whisky-running. One night a man crawled up to your homestead thru the snow, and you took him in."

He saw the sudden fear in his companion's face before he turned it from the lantern.

"It has happened quite a few times," said the latter. "We don't turn any stranger out in this country."

(To be continued.)

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., Feb. 23, 1914.

Supplies of fine butter stock were under good control. Receipts of fancy prints were kept well cleaned up and values ruled firm. There was little trading in the egg market, but prices were well maintained under moderate receipts. Demand was sufficient to readily absorb the limited receipts of fine desirable poultry stock. Trade in fruit and vegetables was quiet

Butter.—Western creamery, 33c; extras, 31c; firsts to seconds 25@29c; special prints 37@40c; near-by prints, 34c.

Eggs.—Candled, 32@35c doz; extras, 30c. Current receipts at $8.10 per standard case.

Poultry.—Fowls, 18@19c; old roosters, 12@13c; pigeons, 28@32c pair.

Dressed Poultry.—Western fowls, 12@19½c; roosters, 15c; turkeys, 21@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 80c@$1 bu. Onions $3@3.25 per 100-lb bag. Peppers $1.75@2 per carrier. Eggplant $2.00@3.50 per box. Lettuce $1@3.50 hamper. Beets, new 5@7c bch. Sweet potatoes, 45@60c bas. String beans, $2.00@3.50 hamper. Squash, $1.50@2.00 box. Cucumbers, Florida $4@5 hamper. Celery, 50@75c per doz. stalks. Cabbage, new $1.75@2 ½-bbl crate. Cauliflower, $1.25@1.75 hamper.

Fruit.—Apples $3.00@6 bbl. Pineapples, per crate, $2.50@3.50. Pears, 50@75c bas. Grapes $4@7 keg; cranberries, $3.00@3.50 box; lemons, $2.00@3 per box; grape fruit $2@4 per box; oranges, $2@3 per box.

Hay and Grain.—No. 3 hay, large bales, $18.00@18.50; No. 1 medium $17.50@18; no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00; straw No. 1 new straight rye, $16.50; No. 2 do., $15@15.50; No. 1 tangled rye straw new $12; No. 2 do., $11.00@11.50; No. 1 wheat straw, $10@10.50; No. 1 oat straw, $10.50@11.00; new shelled corn No. 2 yellow, 72@73c. Wheat No. 2 red, 99½c@$1; No. 1 Northern, $1.04½@1.05½; No. 2 white oats, 45@45½c; No. 3, white 45½@46c Standard white, 45@45½c.

Coffee.—Rio 7s 9¼c; Santos 4s 11⅞c. Mild Coffee.—Cordova, 13@16c.

Sugar.—Cut loaf, $5.10 cwt.; cubes, $4.35; powdered, $4.20; granulated, $4.10; standard granulated, $4.15; crystal A, $4.10.

Flour.—For 196 lbs. in wood, winter-clear, $3.15@4.80; do straight, $4.20@4.35; favorite brands, $5.00@5.25; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos. 5 to 12 and up, $1.55@2.75; do. green 15c.

Provisions.—City beef, in sets, smoked and air dried, 32@32½c. Beef hams, $40@42. Pork family, $23@24 Hams, cured, 13½@14¼c; skinned, 14@14½c; smoked, 17@18c. Other hams, smoked, city cured, as to brand, 17@18c, Picnic shoulders, 10¼@10¾c; do. smoked, 12@13c. Bellies in pickle, 13¼@13¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 12@12¼c tcs; do in tubs, 12¼@12⅜c; do kettle rendered, 12@12¼c. Tallow, prime city, 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 35c ½-pk. Peppers, 50c bas. Eggplants, 10@25c apiece. Cabbage, 10@15c head. Lettuce 8@15c hd. Beets new 10@25c bch. Sweet potatoes 30c ½-pk. White potatoes, 20c ½ pk. String beans, 60@75c qt. Tomatoes, hothouse, 75c small bas; cucumbers, 5@15c apiece. Celery 30@75c bch; squash, 2 for 25c; cauliflower, $1.50@1.75 hamper; mushrooms, 40@50c lb.

Fruit.—Grapes, 25c lb. Apples, 35@40c ½ pk. Pineapples, 30@35c apiece. Cranberries 20c qt; lemons 20c doz; grapefruit; 2 to 3 for 25c; Oranges, 35@75c doz.

NEW YORK PRODUCE

New York City, Feb. 23, 1914.

Eggs.—State and near-by hennery whites, fine to fancy, 34@35c; gathered whites, 34c; fair to good 32@33c; no grades, 30@31c; fresh gathered firsts to extras, 30@34c; seconds to thirds, 25@27½c; no grades 25@26c; mixed 30@31c.

Butter.—Creamery, firsts to extras, 27@31c; thirds to seconds, 23@26c; state dairy 21@30c; packing stock 16@19½c; process 20@23c.

Cheese.—Whole milk specials, 17¼@17½c do. common to fancy, 14½@17¾c; skims 6@14¼c.

Dressed Poultry.—Turkeys, dry, 23@25c; chickens, 14@25c; fowls, 12@18½c; old roosters, 14c; ducks 13@19c.

Live Poultry.—Chickens, 17c; fowls, 18½c; roosters, 13c; turkeys, 20c; ducks, 17@18c; pigeons, 30c pair.

Vegetables.—Cabbage, $20.00@25.00 ton. Green beans, $3.50@4 bas. Carrots $1.50@2.25 bag. Cucumbers, $1@$2 doz. Lettuce $1.25@4.50 bas. Squash, $2.25@3 bbl. Celery, $1.50@4.00 per stan. case. Onions $2.75@3.25 100-lb bag. Tomatoes, $1.00@$3.00 carrier. Peppers $1.50@$3 per carrier. Beets, $3@5 per 100 bunches. Potatoes, $1.00@6.00 bbl. Sweet potatoes, 35c@$1 bas. Eggplants, $2@3 per box. Cauliflower $1.00@1.75 bas.

Fruit.—Apples, $2.00@6.00 bbl. Cranberries $9@13.50 bbl. Pears, $2@3.75 bbl.

Grain.—Wheat No. 2 red $1.03@1.04½; No. 1 Northern, $1.05½; corn, new No. 3 yellow 71¼c; oats, standard white 45½@46c.

WILMINGTON PRODUCE.

Wilmington, Del., Feb. 23, 1914.

Butter.—Print butter, 38@45c lb Creamery roll, 35 @ 45c.

Poultry.—Chickens, dressed, 18 @ 25c; ducks, 18@20c.

Eggs.—35@45c doz.

Vegetables.—Potatoes 40@50c bas. Cabbage, new 4c up. Sweet potatoes 40@50c bas. Onions, 10@15c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets 5@8c bch. Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼ pk. Pinapples, 20@25c apc. Grapes, 10@15c lb; 20@25c bas. Oranges, California, 25@30c doz. Florida, 35@50c doz. Bananas, 10@15c doz. Pears 10c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼-pk. Grape fruit, 7@10c each.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Feb. 23, 1914.

Beef Cattle.—The market ruled strong and higher on the finest steers. The run included Illinois and Ohio brands. All choice calves were firmly held and cows closed steady.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,828	10,636	5,457
Previous week	3,934	8,358	4,948

Best steers	$8.90@9.00
Choice steers	8.60@8.80
Good	8.40@8.50
Medium steers	8.00@8.25
Common steers	7.50@7.75
Bulls	5.25@6.85
Fat cows	6.20@7.00
Medium cows	4.75@5.75
Thin cows	3.00@4.50

Veal calves firm.

Best calves	$11.50@12.25
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	5.00@8.00

Sheep and Lambs.—There was a steady to firm feeling predominating with offerings well disposed.

Choice wethers	5.75@6.00
Good do.	5.00@5.25
Common to medium	3.00@4.25
Ewes, fat	5.00@5.50
Extra lambs	8.25@8.50
Good to choice, do.,	8.00@8.25
Common to medium	5.50@8.00

Hogs.—The market ruled steady at the following prices: Western as to size and quality $12.50@12.75.

City Dressed Stock. — Beef showed an advance with all choice and prime meats closing firm. Steers, 11@13½c; heifers, 10½@13c; cows, 8@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., Feb. 23, 1914.

With cold weather thruout the week and a good active demand prices moved higher Good choice steers are moving easily and fair to medium grades are in good demand. Today's receipts were 85 carloads. With an active demand there was another advance in top grades.

Good to choice	$8.95@9.10
Good 1,300-1,400 lb	8.50@8.85
Medium to good 1,200-1,300 lb.	8.10@8.35
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb.	7.60@8.00
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.50
Common to good fat cows	4.00@6.50
Heifers	5.50@7.75
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves hold steady under fairly liberal supplies and good inquiry. There was a good clearance today at steady prices.

Heavy and thin calves	$5.50@ 8.00
Veal calves	8.50@12.00

There has been an advance in sheep prices. Receipts are only normal and there has been a fair inquiry. Last week saw an advance of from 10 to 15 cents. With 18 double-deck loads on sale today both sheep and lambs held firm at last week's close.

Prime wethers	$6.15@6.40
Good mixed	5.40@5.65
Fair mixed ewes and wethers	4.25@5.00
Culls to common	3.00@3.50
Spring lambs	5.50@8.15

The hog market remains steady on the heavy grades. Yorkers and pigs made an advance of about 10 cents during the past week under good inquiry. Today's receipts were 55 double-deck loads. There was active trading at steady prices.

Prime heavy	$9.10@9.15
Prime medium weights	9.20@9.30
Heavy mixed	9.20@9.30
Best heavy Yorkers	9.20@9.30
Light Yorkers	9.00@9.15
Pigs	9.20@9.30
Common to good roughs	8.00@8.50
Stags	6.75@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., Feb. 23, 1914.

Cattle.—Receipts for the week 2,131 head against 2,408 last week.

Steers	$6.25@8.35
Heifers	5.50@7.25
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh cows	35.00@80.00

Sheep and lamb receipts for the week were 3,284 head against 4,470 last week. Fair supply; market steady.

Sheep	$3.50@6.25
Lambs	5.75@8.40

Hog receipts for the week were 13,742 head against 15,549 last week.

Light western	$9.55@9.70
Heavy to medium	9.50@9.70
Near-by	9.40@9.60
Pigs	9.15@9.40

Calves.—Receipts for the week were 317 head, against 219 head last week. Light supply, market higher at $6.00@12.00.

BUFFALO LIVE STOCK

Buffalo, N. Y., Feb. 23, 1914.

The cattle trade held steady last week The cold weather kept demand active but prices showed little change. There is a good supply of finished cattle coming in and the demand for this class holds good. There were 5,600 head on sale today. Prices moved a little lower than at the close of last week. There was an active trade.

Choice heavy steers	$8.85@9.00
Medium	8.25@8.75
Yearlings	8.00@8.50
Handy butchers	7.50@8.35
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.50@8.00
Butcher bulls	6.00@7.50
Feeders	6.25@7.00
Stockers	5.00@6.25
Cows and springers	35.00@85.00

Calves continue active with a good general demand. Prices are firm at a high figure. There were 800 head on sale today. The demand kept prices firm at last week's quotations.

Choice veals	$12.50@13.00
Lights and thin	6.00@ 8.75

Sheep have been marketed in liberal numbers in recent weeks. The trade last week was active but prices moved lower on sheep and whethers. There were 20,000 head on sale today. The market was quiet at steady prices.

Choice lambs	$8.00@8.25
Yearlings	7.00@7.25
Wethers	6.25@6.50
Ewes	5.75@5.85
Sheep	5.75@6.00

The cold weather keeps the hog market firm. Trade was active thruout the week and prices moved upward, well-finished hogs with weight are at a premium. Today's receipts were 16,000 head. The market was active at higher prices.

Heavies	$9.20@9.25
Mixed and medium	9.20@9.25
Yorkers	9.25@9.30
Light Yorkers	9.25@9.30
Pigs	9.25@9.30
Roughs	8.25@8.40
Stags	6.50@7.50

NEW YORK LIVE STOCK.

New York City, Feb. 23, 1914.

Beef Cattle.—Receipts for week 800 head. Market firm.

Steers	$6.00@9.25
Bulls	5.50@7.75
Cows	3.75@7.00
Dressed beef	12½@14c.

Calf receipts 80 head. Market firm.

Choice	$9.00@13.00
Culls	6.00@ 8.50

Dressed Calves higher. Dressed veals, 16@19½c.

Sheep and lamb receipts 3,200 head. Market strong.

Sheep	$4.00@5.75
Culls	6.25@7.00
Spring lambs	7.25@8.25

Hog receipts 1,600 head. Market higher. Choice, $9.25@9.50; roughs, $8.15@8.50.

NEW YORK MILK MARKET

New York City, Feb. 23, 1914.

The condition of the market has changed little in the course of the last week. The dealers have suffered to some extent by the delayed arrivals of milk trains held up by the heavy weather. The Homer Ramsdell Line carried no milk, as its boats made only three trips. There have been no prosecutions of those dealers who have not met the requirements for pasteurization of their supplies. Should the delinquent dealers show any indication of slowing up in their efforts to get the necessary machinery installed, however, it is promised that the sword will fall.

The receipt of milk and cream in 40-quart cans for the week ending February 21, were as follows:

Railroad	Milk	Cream
Erie	47,007	1,563
Susquehanna	10,049	486
West Shore	15,928	666
Lackawanna	51,850	1,320
N. Y. Central (long haul)	77,278	1,313
N. Y. Central (short haul)	11,820	87
Ontario	42,600	2,826
Lehigh Valley	36,813	745
Homer Ramsdell Line	....	....
New Haven	8,623	140
Pennsylvania	2,475	362
Other sources	1,660	15
Total	306,103	9,523

ELGIN BUTTER QUOTATION

Elgin, Ill., Feb. 23, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter steady at 30c.

NEW YORK HAY MARKET.

New York City, Feb. 21, 1914

The market for hay ruled very steady. Receipts are running light but stocks are liberal at all points. Demand is moderate. Receipts today were 517 tons. Timothy, No. 1, $1.05 bale; standard 97½@$1; No. 2, 90@95; No. 3, 80@85c; clover 85@95c.

Straw.—Straw remains generally quiet. Receipts 20 tons. Oats straw 50@55c bale; rye 85@90c.

TOBACCO MARKET

There was little business during the week owing largely to the first real winter weather of the season. Some sales, however, were reported as having been made during this time or possibly a few days earlier. Following are some of them: Several hundred acres in Manor Township at $9@10 per cwt; 8 acres near Mt. Joy at $8.50@$2, and 8 acres at $9@$2 per cwt. 65 acres at Quarryville at $8@$2 per cwt and higher. The average of reports shows that prices range from $8 to $10 per cwt for wrappers and about $2 for fillers.

The general tobacco market as reported from New York was unusually active in all types of leaf tobacco. Buyers are willing to pay all that is asked and slight advances are noted from time to time. Altho the cigar output shows a decrease as compared with last year manufactures are quite optimistic as to the future and accordingly are laying in extensive supplies of raw material. The new crop in the state of New York is now off the poles and ready for market. Prices being paid there are such as to impart great interest and a large crop will be planted the present year. In Wisconsin but a small part of crop has been delivered but the larger part has been sold; the sow movement being due to cold winter weather. In Connecticut the situation is very active owing to the satisfactory price at which the 1913 crop was sold and it is predicted that a record crop will be grown the present year. There is little activity in the Ohio cigar section. Growers, however, are almost thru stripping.

Much interest is expressed in a recent Government bulletin treating "The Mosaic Disease of Tobacco" known as "calico," "walloon," "chlorosis," "mottled top," "split worm" and "leaf miner," these local names being more descriptive than correct. In some sections this parasitic disease has become quite troublesome and drastic measures of eradication should be employed wherever it is found or it may become as serious a menace to our tobacco fields as the boll-weevil is to the cotton fields of the south. Among the preventive measures suggested are the prompt destruction of tobacco stubble, the cleaning up and burning of all litter about tobacco sheds and the growth of potatoes as far as possible from tobacco fields. The symptoms of the disease are blighted blossoms and leaves dwarfed, distorted, blistered and mottled, sometimes ruining the whole plant and at others the uppermost leaves only.—H. E. Tweed, February 23, 1914.

VALUABLE FREE CATALOGS

Breeding Big Crops.—There have been many "systems" passed out to farmers in recent years as cures for all production ills. Many have disappeared as quickly as introduced because they could not stand the acid test of practice. The most notable exception is the Chatham System of Breeding Big Crops. It remains and is growing with the years because it is right in principle and deals with a fundamental feature—the seeds you sow or plant. A new handsomely illustrated booklet tells all about this system and how it may be practiced by every farmer in getting better and cleaner seed. The booklet is free for the asking. A postal-card request to the Manson Campbell Co., Dept. 72, Detroit, Mich., brings it.

"New Way To Buy By Mail".—The United Factories Co., 315 Factory Building, Cleveland, Ohio, is providing a system whereby consumers can buy products from different factories direct under a safe guarantee and an opportunity to examine the goods before a payment is made. A new catalog, showing the products of 33 different factories, including paints, roofing, wall board, shingles, buggies, harness, engines, fencing, furniture, and many other items, will be sent free upon request to the above address. Their advertisement appears on page 20 of this issue.

Vegetable Tapes. — Vegetable growers who appreciate the value of an added touch to the appearance of their products on the markets will be interested in investigating bunching tapes put out by the Wick Narrow Fabric Co., 933 Market St., Philadelphia, Pa. The tape is cheap and may be purchased in fast colors preferred. Their use adds nothing to the quality of the product, of course, but gives the bit of "finish" which usually brings a few cents more for the commodity on the market.

Atlas Farm Powder.—"Better Farming With Atlas Farm Powder" is the title of a valuable 65-page book now being distributed free by the Atlas Powder Company. The book discusses the use of powder in subsoiling, drainage, tree planting, stumping, rock crushing, excavating, etc. It gives complete descriptions for handling of powder in these various uses and is fully illustrated The book is sent free upon request to the Atlas Powder Co., Dept. Pa. F. 21, Wilmington, Del.

Plant Setter.—It will soon be time for setting and transplanting spring plants. Now is the time to investigate plant setters and prepare to care for the work with the least hired help. Masters Rapid Plant Setter is something new which sets all kinds of plants in water and covers the roots at one operation. It is completely described in circular matter sent free upon request if you write for it. Address Masters Planter Co., Dept. F., 150 W. South Water St., Chicago, Ill.

Garden and Poultry.—The 34th annual catalog issued by John W. Hall, Marion Station, Md., lists a full line of sweet potatoes, strawberry plants, seed corn, asparagus roots and poultry. Complete description and prices are given. The catalog will be sent free to all who write for it to the above address. Mention Pennsylvania Farmer.

Corn 11 Cents A Bushel.—At Milwood Farm, Framingham, Mass., 6 acres of corn grown on Bowker's Stockbridge Corn Manure exclusively, and charged with the cost of taxes, seed, fertilizer, plowing, planting, harrowing, cultivation, harvesting and husking, as well as stacking the fodder, and crediting the fodder at $8 per ton, gave shelled corn at a cost of about 14 cents per bushel.

Farm Implements.—Every farmer contemplating the purchase of a farm implement this spring should investigate the new catalog recently issued by Belsher and Taylor Agricultural Tool Co., Box 20, Chicopee Falls, Mass. The Stevens Broadcast Fertilizer Sower handled by this company is certain to fill a long neglected field. This machine sows all kinds of commercial fertilizers broadcast or in rows and is provided with a land guage which guages the amount of fertilizer applied per acre. The catalog also lists a full line of plows, harrows, ridgers and coverers, cultivators, weeders, rollers, corn planters, feed cutters, hay tedders, rakes, etc. The catalog is free upon request to the above address.

READ A GOOD SEED BOOK

At this time of the year the seed advertisers have published their catalogs for next spring and are offering them to our readers. Every farmer should get and read at least one of these books. They are full of helpful information concerning seeds and plants, treatment of the soil, etc. In buying seeds or nursery stock, it is well to get the order in early, even tho it is not to be shipped immediately, as the early orders are filled with the best stock. Look over the advertisements first.

USE THE RIGHT ADDRESS

When writing letters to advertisers, it is a good plan to use the correct address just as it is given in the advertisement. This will insure prompt delivery and immediate attention. Postal employes say that a very large amount of mail is wrongly addressed. The state or the street address, or both, will be omitted, or the town or city will be mis-spelled, or the firm name will be written and no address whatever given.

These are due to lapses of memory or to diverted attention, and to avoid them, one should refer to the advertisement, before addressing the envelope, and then copy the address just as it is given in the paper. Be sure to give your name and address in full. In our own mail it is surprising how many letters reach us, many containing orders, with incomplete addresses.

LEGAL QUERIES

Landlord and Tenant.—If a party rents a farm, and a third party holds the lease, has the landlord any right to go and get the lease and hold it for a week? Does such action break the lease or not? W. D., Lawrence, N. J.—Under the facts stated, (which are very indefinite) the action of the landlord in taking the lease cannot affect the validity of the lease. The execution and delivery of a lease gives the lessee an estate in the land for a certain period, and the possession of the paper itself is of little importance. Additional facts, such for example, as delivery by the landlord to a third party pending acceptance of an offer, might alter the case.

Big Saving.—During a recent outbreak of hog cholera in eastern Allegheny County, agents of the State Livestock Sanitary Board, under the direction of Dr. C. J. Marshall, State Veterinarian, vaccinated 350 hogs. The losses following this work were only about 3 percent as compared with a usual loss of nearly 80 percent in any active outbreak of this disease where serum treatment is not carried out by the Board; and in addition the spread of infection was checked.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Rheumatism.—I have 2 lame pigs. They are three and one-half months old. I first fed them milk and some middlings and corn meal, adding a small quantity of oil meal. Their food supply has principally consisted of milk and this mixture of meal since I have owned them. When two months old the largest one showed a little lameness. Some time later the other one went lame, but both of them have continued to grow and are at present apparently thriving. M. G. S., Arcade, N. Y.—Change their feed, giving less corn and give them some roots; also give each one 4 grains sodium salicylate and 5 grains powdered nitrate of potash at a dose, 3 or 4 times a day. Rub the lame leg with spirits of camphor, twice a day.

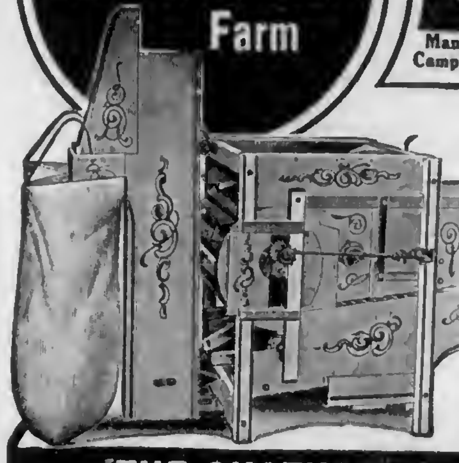
Sore Feet.—I have a young cow that is troubled with sore feet and most of the trouble appears to be between the toes. She is very lame, moves stiff, but has a good appetite. She came fresh five weeks ago, is some hide-bound, thin in flesh, but gives 6 quarts of milk at a milking. N. M. B., Selinsgrove, Pa.—First of all, thoroly disinfect stable floor, keep her stall clean and well bedded. Also apply 1 part powdered sulphate copper, 4 parts powdered alum and five parts oxide of zinc to sores, twice a day. Also apply calomel to sores, once a day. A piece of oakum should be placed between claws in order to keep our dirt. Another very good application is made by mixing 1 part iodoform in 9 parts of boracic acid, but this is objectionable on account of its odor.

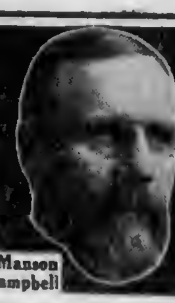
Cancerous Tumor.—I have a horse that has a bunch about the size of an orange on coronet which looks angry and sore, but it causes no lameness. This bunch first appeared 4 weeks ago, but no veterinarian was consulted until last week, and he refused to tackle it, claiming the case had been allowed to run too long. H. F. L., Birdsboro, Pa.—Either apply powdered sulphate of copper, chromic acid or burn it off with a red-hot iron; then, apply powdered alum twice a day. By applying tincture of iodine once a day and tincture of iron daily, you might be able to reduce bunch. In my practice I never hesitate to cut off a bunch of this kind, then treat it as a simple wound.

Eczema.—I have a 4-year-old colt that commenced to itch about a year ago, at which time I examined him for lice and found none. He continued to bite himself, especially his legs, and rub mane and tail. Last spring he was shedding, but during the summer he seemed better. Soon after stabling him this winter, this itchy condition of body reappeared. It is not unusual for his legs to bleed some. J. M. S., Cochranville, Pa.—He should be groomed well twice a day. Give him ½ oz. Donovon's solution at a dose in feed or water, 3 times a day. Feed him some roots, salt his feed and apply 1 part bichloride mercury and 1000 parts water to itchy parts of body, twice a day. Sprinkle on some finely powdered sulphur every day or two.

Ringbone.—I have a 14-year-old horse that has a bunch low down on right fore pastern. It is causing him to travel lame. I have applied liniment for a time and also blistered him with a commercial remedy, but he is no better. M. E. T., Sandy Lake, Pa.—A low-down ringbone usually causes serious lameness and is not easily cured. Your horse will travel better if shod with a rolling-motion shoe. Also apply 1 part red iodide of mercury and 4 parts lard every week or 10 days and if you do not need to work him give him absolute rest for 6 or 8 weeks.

Nodular Disease.—About a week ago one of my sheep died. I opened her and found a great many small bunches on bowels filled with a greenish substance. None of the other organs seemed to be diseased. Now I am at a loss to know what ailed this ewe. J. S. T., Girard, Pa.—Your ewe died of nodular disease. Give 5 grains powdered sulphate iron, 15 grains of ground gentian, 15 grains of ground ginger and 20 grains of salt at a dose in feed twice a day.





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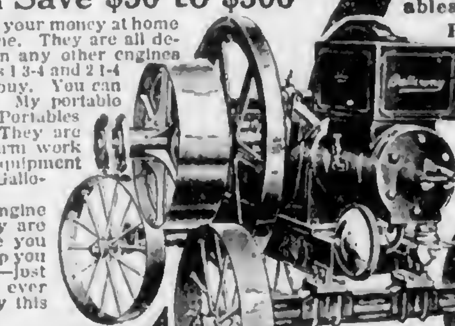

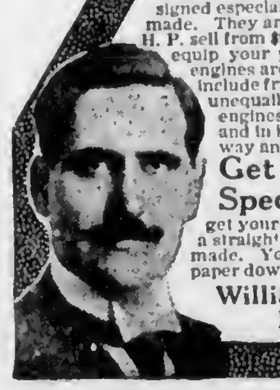

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Turkey City, Pa., Dec. 23, 1913.
Dear Sirs:—The Unito Engine which I got from you several years ago is just as good as it was the day I got it and now I am in need of some roofing, so I thought I would write you for your prices. J. F. Jones.

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Reynoldsville, Pa., March 10, 1913.
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Fredonia, Pa., June 17, 1913.
Dear Sirs:—Received the Garden Cultivator O. K. It is a very good tool and I am well pleased with it. Samuel McBurney.

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ESTABLISHED 1880
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VOL. 35—No. 10. PHILADELPHIA, PA., SATURDAY, MARCH 7, 1914. 2 YEARS FOR $1.00.

Agricultural Short Course Graduates.

By Prof. A. L. CLARK,
New Jersey Experiment Station

Within the next few weeks several thousand graduates of Agricultural Short Courses will be turned out upon the farms of the country. Many of them have farms of their own, or parents or friends to go to; many must find places to work for wages in order to support themselves. Some have spent their lives at farm work, some have had a little experience while more and more each year are graduated without any practical experience. Is it not a question of much importance and a subject which all agricultural workers should earnestly consider, "What is to be their future?" "How are we farmers going to receive them?" "What is to be their influence upon our work?"

Much Depends Upon The Attitude Of The Young Man.—The farm-raised man who takes the Short Course usually has the right attitude toward the relationship between rural life and scientific agriculture. He has been trained in hard work; industry and patience are recognized by him as necessary to farm success. His presence at the Short Course proves that he realizes that without special education in the science of his profession large success is almost impossible. He recognizes the fact of his finished course as a new beginning, and that thereafter he is in a much better condition to learn the fundamental things connected with his work, and by combining the knowledge gained from experience with his newly-acquired learning, and applying himself industriously to his work, he is assured of an excellent living, and a happy and well spent life.

The young man without the advantage of this previous experience is like a ship without an anchor. He has little conception of farm work or farm life. He is too apt to over estimate the value of his education. In plain words, he is like the average young ambitious man—a little knowledge puffs him up. He believes what he does not know about his work is not of much value. We see the same thing all the while in other lines. Let us not blame these inexperienced boys too much. They mean well. They would not have undertaken to make farmers of themselves if they had not some strong purpose. It seems that tradesmen and mechanics take in apprentices. They often find the same trouble, but still these learners make the future business men and craftsmen. Can we not receive these beginners with a better spirit? Let us try to put up with their assumption; it is natural in young people. They will learn that time and experience ripens. They are ready for the ripening.

We owe it to our profession to give these ambitious young men a good start. Nothing is so necessary as to guide their attitude into friendliness with present conditions without losing their purpose of progressiveness. The city boy has that great disadvantage of being a city product when he undertakes farm work. His whole being is saturated in city habits, city pleasures, city thoughts, city ways of doing things and city ways of thinking. A readjustment is necessary before any degree of pleasure is secured or farming success can be attained. Some have natural ability to fit themselves into their environment. Others retain their acquired attitude and change comes very slowly. Much depends upon the attitude assumed by the graduate toward farming, and let us not forget that much depends upon the farmer's attitude toward him.

Snap Judgment Has Not Always Proved Correct

Many of our more progressive farmers as well as some of agricultural leaders and authorities have little faith in City Short Course graduates. Their experience has led them to hope for little from any of them. Yet in some cases first judgment has been later refuted and a few very fine [illegible] have been born anew from city boys. These graduates, who must go to work for wages, have some trying experiences to meet and it is no wonder that many of them get discouraged and give it up. Often it is their first experience of living away from home. If they are city-bred they have a decided change in environment. Are farmers in general liberal-minded enough when it comes to putting up with the, to them, queer ideas and desires which they show?

Most of these men desire experience rather than wages. Very often they are given the most simple which is also the least interesting work to do. Sometimes if they are found to be proficient in any particular line they are put to doing that kind of work entirely. Quite often, in the case of farm-bred boys, they know how to milk and about all they learn is the different cow's names and how much each one gives. They probably wanted to learn how to use the separator or the Babcock test if such things are used on the farm, or perhaps they thought they would get an opportunity to see alfalfa cured and handled or some modern machinery handled. These young men are after knowledge and broad experience. They are not content to spend as many years as the average farmer did to learn the business. They do not recognize the importance of imbibing the spirit of patience. They often misconstrue it for apathy or outright laziness.

Perhaps they disappoint the farmer in their own lack of industry. If many of us would look back in our own lives we would find a time when we had much rather take a nap under a shady tree or go swimming than finish a long row of corn or potatoes. Many farmers find it hard to secure and keep good workmen. They all believe that they treat their men much better than city employers. Possibly they do, but there is a sense of lonesomeness and isolation on the farm which many men feel acutely. Long hours are not responsible for half as much of the dissatisfaction among farm help as is this factor. To young men this is an especially strong factor. The farmer and his family must take a personal interest and make it felt among their men if they are to counteract this instinct for town sociability.

A Possible Source Of Intelligent Farm Help.—Every Short Course College in the country is turning out more young men every year. Most of these of farm experience have farms of their father's or some one else's to go to when thru. Most of those who will look toward a good, well-conducted farm to get work will be men of little or no practical experience. This condition does not prevail in the West so much as in the East. How can these young men get the experience they so much desire? Are we going to pass over them entirely simply because they can not hitch up a horse or milk a cow. Many of the foreign men that are hired every year can not even understand what we say to them, not to mention hitching a horse to a rig twice in the same way. Here then is the proposition: Can not the farmers look upon the Short Course graduates as a source of intelligent but inexperienced help? Can not these young men make satisfactory help at low wages if not too

THE FARM WORKSHOP PROVIDES EMPLOYMENT FOR STORMY DAYS AND SAVES MONEY IN REPAIR BILLS.

much is expected of them? Cannot the instructors at the colleges endeavor to impress upon their students that farming is not taught; it is learned by absorption? In this co-operation it would seem that much profit might accrue to all interested.

TREATMENT OF SEED POTATOES

The Mercer County, N. J., Farm Bureau has been holding a series of meetings lately at which the growers have been given expert advice concerning the treatment of seed potatoes. At each of these meetings, which were held at convenient local centers, Prof. G. W. Martin, assistant state plant pathologist, gave a talk. He quoted his chief, Dr. Mel T. Cook, who said that "by seed selection and by seed treatment half the losses the potato growers sustained last season could have been prevented." Dr. Cook was recently in Maine urging growers there to more careful seed methods, and that they should allow inspection of their fields during the growing season by representatives of the various potato associations.

As the simplest and most practical seed treatment, Mr. Martin recommended the soaking of the whole seed for two hours in formalin or formaldehyde solution, one pint to 30 gallons of water. This treatment, he said, would kill most of the plant diseases which affected the outside of the potato, mainly common potato scab and black leg, and would decrease the amount of scurf; altho if the latter disease was prevalent he would rather use the corrosive sublimate solution, three ounces to 30 gallons of water. He would not, however, recommend the latter solution for general treatment on account of its extremely poisonous character.

Mr. Martin plainly stated that treating the seed with formalin would not alone produce a good crop of potatoes, and it would not kill the disease germs in the soil. Nevertheless, he said that the Experiment Station believed that the time was at hand when it was necessary for all growers to treat their seed, otherwise the danger of infecting the ground with more diseases which could not be easily eradicated was too great. The cost, he stated, was small and the protection given worth much. It must not be forgotten, that the potatoes should be spread out to dry after soaking as soon as possible and they can then be directly cut for planting or stored in disinfected bins or bags.—D. T. Hendrickson, Monmouth Co., N. J.

THE FARMER'S APPEAL TO HIMSELF

The farmer generally has allowed money consideration to stand too grimly his master and guardian. When he hears of the bumper crops, the cheap land, the great chance for speculation in farms rapidly rising in value in other states his own farm comes to look tame to him. He forgets the advantages at hand, sees only the glitter of the gold to be made so easily in some distant community.

May-be he has neglected to keep the boards nailed on the fence even, the wallows filled, and the weeds cut. These things make matters look worse, and probably Mr. Farmer tramps discontentedly around them thinking all the time of how he will make things go when he gets to the land of his strong desires. The house has not been painted possibly for twenty years; possibly the barn has never been painted. Things do not look tidy, altho it would not take very long to slick the place up wonderfully.

He lives on a good pike, near a good town and school, good outlets appeal for drainage; congenial neighbors who know and appreciate him are all around. Why does he want to leave his home? He wants to leave because he has never done anything for the place to appeal to him to stay. Suppose he had begun to paint, to tile his farm, and get out of his "rut"!

We were not all made hustlers; not all for glorious successes. May-be we could do no better on some other farm in some other state than we are doing right where we are. Sometimes an awakening, a regeneration of inspiration and ideals is attended with happier results than the much desired change.—George P. Williams, Delaware Co., O.

Home Mixing of Fertilizers.

By ABRAM BUNN, Bedford Co., Pa.

Many farmers in recent years have adopted the practice of mixing their fertilizers for themselves. Many find it cheaper and more satisfactory as they are able to secure just the mixture that is needed on their farms. The following is written for the benefit of those who desire to mix fertilizers at home and who lack directions for the work.

Objections

The objections, which are urged and often effectively, against home mixing are as follows: The farmer cannot mix as thoroly as a fertilizer company which is equipped with special machinery. 2. The home mixture will not work thru the drill. 3. If there is any of the mixture left over it will cake and become worthless. The first objection is rather inconsistent so long as fertilizer concerns use the alternative formulas in their statement of analysis. How can any concern claim to mix accurately and at the same time put out such a formula as "Ammonia, 2 to 4 pct; available phosphoric acid, 8 to 10 percent; potash, 4 to 6 percent.

As a matter of fact, the farmer, with a rake and shovel can mix accurately enough for all practical purposes. In the trucking districts of New Jersey farmers have been doing it for years and analysis has shown a remarkable accuracy in the work. There they mix in considerable quantities, allowing the mixture, after raking the several materials and shoveling them over until the colors have well blended, to stand in a large pile, cutting it down for use as required. The whole process of mixing is done when the colors have blended and the streaks are gone. Trifling inaccuracies there will be; but when the stuff gets in the ground the movement of soil water will quickly distribute the materials so that the average in the ground will be excellent.

As to the second objection, I have never seen a drill that worked well with a commercial brand that would not do the same with home mixtures. The fault is not with the mixture, if there be a fault, but with the drill. The third objection is valid to a certain extent. Allowing concentrated, home-mixed stuff to stand for a long time will result in caking and trouble. But what is the use of allowing it to stand; why have any left over? If we can save money and improve crops by the use of a home mixture, why not mix for the day's needs or for a day or two ahead, and not have anything left over to cake and bother us? However, if there should be, for any reason, some of the mixed stuff left over after seeding, simply mix with it some dry sand or ash-waste and re-sack it. We have then put it away in much the same shape as the factory would furnish it. Do not, however, mix wood ashes with a fertilizer containing nitrogen or ammonia.

Cost Of Home-Mixing

The average freight rate on fertilizer to Pennsylvania points is $2.20 per ton in carloads and $3.40 per ton in less than carloads. I have used this average rate in the following tabulation. If you are in the eastern part of the state, the cost of home mixing will be slightly less; if in the western part, it will be slightly more. But remember that the figures given include the freight, so that you can check up what it ought to cost you for your fertilizer of any desired analysis. Or, to put it in another way, you can figure how much it will cost you to get any formula of actual, available plant food by simply multiplying the cost of one percent by the total percents of the commercial brand. Here is the table:

	Cost	
	Carload lots	Smaller lots
1 pct nitrogen	$3.66	$3.73
1 pct ammonia	3.00	3.07
1 pct avail. phos. acid ...	.75	.82
1 pct potash (muriate) ...	.82	.84
1 pct potash (sulphate) ...	.99	1.01

Suppose you want a mixture to analyze 2 percent ammonia, 8 percent available phosphoric acid and 4 percent potash. To determine at what figure you can supply the plant food in a ton of this brand is a simple matter:

	Carload lots	Smaller lots
2 percent ammonia (2 times cost of 1 percent) ...	$6.00	$6.14
8 percent available phos acid (8 times cost 1 pct)	6.00	6.56
4 percent potash (muriate) (4 times cost 1 percent).	3.28	3.36
Total	$15.28	$16.06

There is, of course, the additional cost or labor of home mixing. This is offset as follows: In every commercial brand there is used a make-weight of inert material either added for the purpose or secured thru the use of low grade goods to bring the total weight up to the ton weight sold. Assuming that a ready-mixed brand contains the same high-grade material as we use in home-mixing, it is easy to find out how much this make-weight amounts to. The following table will enable you to do that with any formula, viz: For 1 percent ammonia allow a weight, of 105 lbs; for 1 pct. nitrogen allow 130 pounds; For 1 percent available phosphoric acid allow 125 pounds; For 1 pct. actual potash allow 40 lbs. The formula under discussion would thus be composed of the following quantities of fertilizer material, to make up its lowest guaranteed percentage viz: 2 percent ammonia (105 pounds by 2) 210 pounds; 8 percent available phosphoric acid (125 pounds by 8) 1,000 pounds; 4 percent actual potash (40 pounds by 4) 160 pounds; Total weight of fertilizer materials, 1,370 pounds. Therefore the filler needed to make up one ton of 2,000 pounds would be 630 pounds.

The labor of home mixing is not great. A good man will mix the equivalent of from 4 to 5 tons in a day on the barn floor. In ready mixed goods you must haul from the railroad a third again as much weight and must handle it on and off the wagon. So we offset the labor of home mixing against the labor of hauling and handling this excess weight.

Home Mixing For Large Farm

We use the ton of 16 percent acid phosphate as the basis of all home mix ing calculations, and stick to the dec mal system because that makes it eas er to handle. The following is a state ment of proportions used in the "To Sack Method":

1 sack nitrate of soda makes 1 per cent nitrogen, or 1.2 percent ammonia.

1 ton 16 percent acid phosphate makes 10 percent phosphoric aci (available).

1 sack potash salts makes 3.15 per cent potash (actual).

Rule 1. If you want a larger or smal er proportion of nitrogen or potas increase or decrease the number o sacks (or parts of sacks) of nitrat or potash salts accordingly, but do no change the base of 1 ton of phosphate Thus: Adding ½ sack of nitrate o soda would increase the proportion o nitrogen from 1 percent to 1½ percen using 2 sacks of muriate instead of on would make the proportion of potas 6.3 percent instead of 3.15 percent.

Rule 2. If you want to raise or lowe the proportion of phosphoric acid from the 10 percent base, add to or sub tract from the sacks of acid pho phate, but do not change the quantitie of nitrate or potash salts. Thus: I we want 8 percent phosphoric acid in stead of 10 percent, we would use only 8-10 of the sacks in the ton of aci phosphate. In a ton of 16 percen phosphate there is just as much actu phosphoric acid as there would be in 1. tons of ready-mixed fertilizer contain ing 10 percent phosphoric acid, that i in 3,200 pounds. By the "Ton-Sac method," therefore, we always figur that the total quantity of home mixtur is equivalent to 3,200 pounds of a com mercial brand of the same formul which gives us:

Rule 3. Add together the actu weights of fertilizer materials mix by the ton-sack method, figure that th total weight replaces 3,200 pounds com mercial fertilizer, and cut down th application for the field accordingly These three rules are fixed, do not var and cover the entire matter of hom mixing by the ton sack method. Th following example will illustrate th application:

Example.—Suppose we want to re place the formula heretofore discusse 2 percent ammonia, 8 percent pho phoric acid and 4 percent potash, w would use, by the ton-sack method, th following quantities: 1 sack of nitrat furnishes 1.2 percent ammonia; 2 sack nitrate furnishes 0.8 percent am monia. Total ammonia, 2 percen One ton of 16 percent phosphate fu nishes 10 pct. phosphoric acid. As w want but 8 percent, however, we us (as per Rule 2) 8-10 of a ton to furnis 8 percent phosphoric acid. 1 sack muriate of potash furnishes 3.15 per cent potash; ¼ sack (strong) furnishe 0.85 percent potash; total potash 4 per cent. The weights of materials actually used (see Rule 3) are as follows: 1 2 sacks of nitrate (200 pounds each) 33 pounds; 8-10 ton of acid phosphate 1,600 pounds; 1¼ sacks muriate at 2 pounds each, 250 pounds, making total of 2,183 pounds. This 2,1 pounds (Rule 3) is equivalent to 3,2 pounds of a commercial brand 2-8-4 We should use, therefore, just abo two-thirds as much of the home mixtur as of the commercial brand.

How Home Mixing Is Done

Empty a sack of phosphate on th barn floor; weigh out the quantitie of muriate and nitrate to go with i Dump them on the heap, and shovel an rake over a few times until color blend. The work is then well done an the mixture is ready to use. It wil save time and bother if you have a couple of buckets, and, when you have weighed out the quantity of nitrate and of muriate to be used with a sack of phosphate, make a chalk mark inside the proper bucket and next time fil

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up to that mark. If you have any material left over after seeding, mix with it a little dry sand, dirt or coal ash waste.

Home Mixing For The Small Farm

For the small farm, home mixing is extremely simple and easy. When you go to the field to do the seeding take, in addition to the half-bushel measure, a four-quart pail, a shovel, and, if you have one, a peck measure. This system is based on the known percentage of plant food in nitrate of soda, potash salts and 16 percent phosphate, and on weights of the material as follows: 1 sack of 16 percent phosphate weighs 167 pounds; 1 bushel muriate or sulphate of potash weighs 100 pounds; 1 bushel nitrate of soda weighs 83 pounds.

After you get into the field clear a space in the back end of the wagon box, empty a sack of phosphate there, pour upon this pile the quantities of nitrate and potash salts to go with that sack and shovel the pile over until the colors blend. Then you have a perfectly well-made mixture, ready for drilling. Here are the proportions for field mixing: A sack of 16 percent phosphate furnishes 10 percent phosphoric acid; A heaped four-quart pail nitrate furnishes 1 percent ammonia; 1½ level 4-quart pails nitrate furnish 1 percent nitrogen; a scant 4-qt. pail muriate furnishes 2 percent potash; A level peck muriate furnishes 4 2-3 percent potash.

MISS ALEEN FELL, MERCER CO., PA.
Prize Winner at State College Corn Show.

Example.—Suppose we want, by this method, to replace the formula we have heretofore considered, containing 2 percent ammonia, 8 percent phosphoric acid and 4 percent potash. We would use two heaped 4-quart pails of nitrate for 2 percent ammonia; two scant 4-quart pails muriate for 4 percent potash. The sack of acid phosphate would furnish (as above stated) 10 percent phosphoric acid; but, as we only want 8 percent for this mixture, we use 8-10 sack for 8 percent phosphoric acid. The 167 pound sack of 16 percent phosphate contains 1.6 as much actual available acid as a 167-pound sack of commercial brand guaranteed to carry 10 percent phosphoric acid. The home mixture, therefore, is equivalent to (1.6 times 167 pounds) 267 pounds of the commercial brand.

Add together the weights of the materials used in making the "One-Sack-Mixture", and this total weight is exactly equivalent to 267 pounds of a similar commercial brand. Thus, in the case just considered we have used 8 quarts nitrate weighing (¼ of 83 pounds) 21 pounds; 2 scant 4-quart pails of muriate, weighing say 23 pounds; 8-10 of one 167-pound sack of phosphate, 134 pounds, making a total of 178 pounds. This 178 pounds is equivalent, as stated, to 267 pounds of commercial 2-8-4, and the application can be cut down accordingly to about two-thirds as much as would be used of the commercial brand. This wagon bed mixing is quick, effective and certain. As soon as colors have blended the mixture is ready for and will work thru the drill; and, as you are mixing a sack at a time, you are not going to have any left over to bother with.

QUEEN OF PENNSYLVANIA CORN GROWERS

The accompanying illustration shows Miss Aleen Fell, of Mercer County, Pa., who was awarded a special prize in State College corn-growing contest for 1913, for the second best 10 ears of corn produced anywhere in the state. She raised almost 98 bushels of shelled corn from her acre of land and defeated 80 boys in the Mercer County contest. She is but eleven years old and was the youngest participant in the state contest. As a result of her work she was given the title of "Queen of Pennsylvania Corn Growers" at the recent Farmers' Week at State College.

CAN A POOR YOUNG MAN SUCCEED?

I write this simply to encourage other young men. I started farming for myself and wife three years ago this coming April. In starting I purchased an 86-acre, run-down farm that had been rented for five years and cropped four years. The purchase price was $7,600. I had $600 to pay on the purchase price and gave a mortgage of $7,000 at 5 percent. Besides the $600 I had enough money to buy two cheap farm horses, what little machinery I was compelled to have to farm with, and one cow.

The first year we merely made a living and cleared expenses. The farm was run out of grass and that cut the hay crop short; only getting a little over eleven tons. The second year the hay crop was still out of the rotation, but I made a little over expenses. In December of 1912 my house burned down with a little over half enough insurance to cover loss. We rebuilt the the following summer.

In the summer of 1913 I started a dairy, buying common cows, five in June and July and three in October and November, borrowing money to pay for them. I started then to ship milk to Philadelphia at 4½ cents per quart. Having fairly good pasture on my mowing fields after harvest, I turned the cows in. I bought mill feed for the cows for six days and found that the feed would eat up too much of the milk money. So I gave the cows only their living in pasture until November. After that I kept them in the stable and fed new corn, and later, oil meal. Up to January 1st, I fed 2,000 lbs. to nine cows, the cake meal being the only feed bought.

With the nine cows all in different stages of profit, from June 21st until January 1st that made a total of 11,148 quarts which brought, less freight, $603.01. Seven calves sold brought $119.50. The first cost on 8 cows was $515. Among other sales were 32 tons of hay, $153; 13 hogs, raised and fed on farm, $207; smaller sales, $277. By these transactions of 1913 I have paid for the eight cows and have paid $1,115 on the new house, which with the insurance, clears a new stone dwelling. I have had other sales to cover run-

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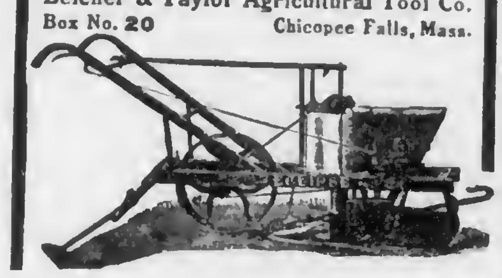

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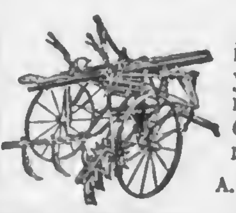

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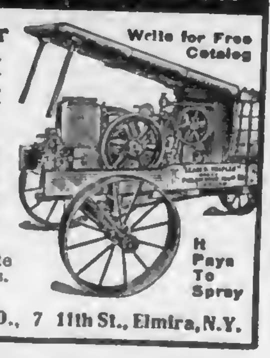

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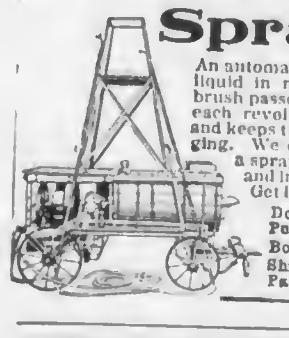

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Farm Crop Notes

By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Farm Comments

In spite of all that has been said and done, and with frequent object lessons in better things, one notices in almost every community the all-too-common neglect, on many farms, to do the following three things: To take proper care of the manure; to give the right care to the farm orchard; and to make a persistent effort to improve the home and the home grounds. Harsh as it may seem, the only excuse that can be offered in most instances is a lack of intelligent interest and effort.

Surely, every farmer knows that he is losing money by throwing the manure out at holes in the barn, under the eaves, and leaving it there until spring to heat and leach away; or, by doing what is not much better, hauling it to the field and putting it in small piles until spring plowing.

Surely, with the scarcity of good fruit and with the present high prices, the thoughtful farmer must realize that it would pay to spend a part of the winter season in pruning the farm orchard. There is probably no more noticeable lack of good practice than is seen in the neglected orchards. Even if commercial fruit growing is considered a business for the specialist, farmers cannot afford to let the farm orchard go to ruin.

Too often we see farm homes and surroundings that, apparently, have received as little attention as the orchards. I visited an old man at his farm home some time ago and voiced my admiration of his well appointed and comfortable home. He replied: "When my wife and I came here, forty years ago, we made the resolution that we would add something to our home every year that would add to its comfort and beauty. We have kept that up, and while it is still a modest home, we are not ashamed of it." Little by little, things needful were added; trees, shrubs and flowers were planted until it is a splendid example of an ideal country home. Yet at no time did they embarrass themselves by extravagant outlay. They had an ideal, and they worked toward it. Too many defer improvements and additions to a more favorable time and gradually settle into a satisfied feeling when there is no desire for change.

Crops in Young Orchard

E. S. P., Berks Co., writes: "I have a young apple orchard, planted last year, which I wish to keep cultivated and in which I wish to raise some other crops as I cannot afford to lose the use of the land. What can I plant and what should I use as fertilizer?"

Resolve in the first place to add at least as much fertility in manure or fertilizer, or both, as the inter-crops will remove. In the second place, only such crops as can be removed by midsummer should be planted. Early potatoes and early cabbage are among the best. Early tomatoes may also be grown. After the crop is removed, say about the first of August, sow a cover crop—a legume, as crimson clover, or rye and winter vetch.

Improving Soil in Orchard

"I have an apple orchard of six acres which has been used as a pasture for pigs and calves for ten or twelve years. I have just pruned the trees and want to give them good treatment from now on. They have not borne well nor made much growth lately. What shall I do to the soil? E. N. S., Potter Co., Pa."

If you have manure, give the orchard a good coat of manure now. Apply between the rows. It is not necessary to place any within five or six feet of the trunks. Then sow about 400 pounds of acid phosphate per acre. Plow the ground next spring, being careful not to plow so deeply as to seriously injure the roots. If manure is not to be had, apply 500 or 600 pounds per acre of good complete fertilizer after plowing and harrowing. Keep the ground harrowed until mid-summer and sow a cover crop to plow down the following year. The trees evidently need cultivation and plant food. These things are supplied for the benefit of the trees, and fruitage is the result.

Run-down Buckwheat Land

E. C. T., of Crawford Co., writes that he has a piece of very badly run-down land that he wishes to restore. It has been sown to buckwheat for 20 years and there is practically nothing left. He inquires whether sweet clover would help.

Probably the first thing this land needs is lime. After such usage as is mentioned, lime would most likely be required before any legume will succeed. Sweet clover might be a good thing to sow, then let it lie 2 or 3 years in that. However, after liming, medium red clover would probably succeed fairly well, especially if a light application of manure was given. After turning this in, endeavor next to get a sod—a red sod started. Sow heavily with timothy, alsike clover and red top. Top-dress this with manure or a high grade fertilizer. Buckwheat land needs the effect of a heavy grass sod to bring the right mechanical condition. It will require time to bring this land back.

Sowing Grass in Oats

F. K., New Jersey, writes: "What are the objections to sowing timothy with oats? I had too much other work to allow me to seed last fall."

There are no objections to sowing grass seed with oats. Very many farmers practice this method. The stand of grass may not be as even or as heavy as when sown alone, especially if the oats grow large and thick on the ground.

The grass seed should be covered by a weeder or light harrow, or sown ahead of the drill hose. Use plenty of seed.

Garden Soil

G. B. S., Mercer Co., writes: "Our garden does not produce satisfactorily. It has been used a great many years but lately tomatoes, corn, etc., do not ripen."

This is a very common complaint, and is the result of a long continued uniformity of practice. Lack of rotation, exclusive use of barnyard manure, failure to grow cover-crops have unbalanced the soil. Give a heavy application of a fertilizer rich in phosphoric acid and potash. Sow a cover crop of some kind as soon as a crop is off. Grow a grass sod occasionally. Omit for a year or two the barnyard manure, using fertilizer instead.—R. P. K.

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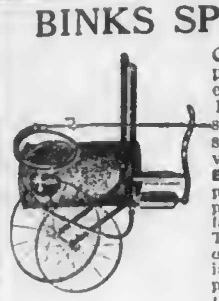

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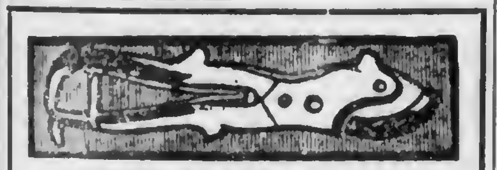

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Plant Breeding and Seed Saving by Farmers

By C. C. HULSART, Monmouth Co., N. J.

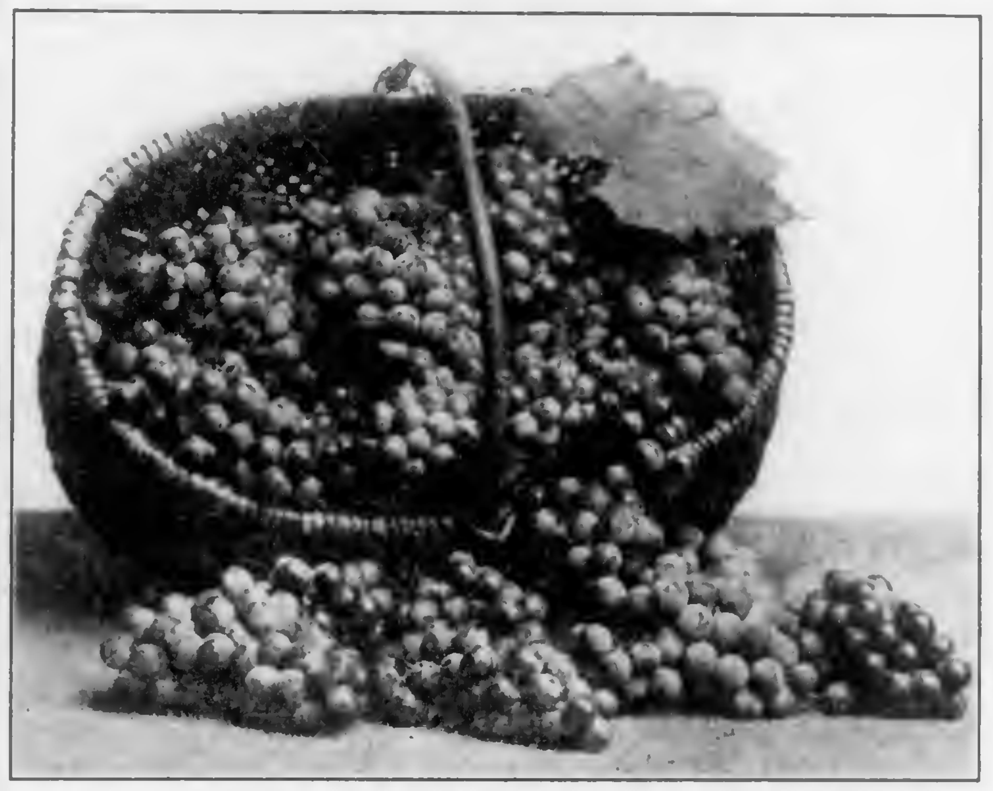
The question of seeds for the farm is an all important one. The cost of seeds is a mere bagatelle in comparison to value of crop, and yet most farmers look solely at first cost. It is a noticeable fact among purchasers of vegetable seeds, and flower seeds too, that before making the purchase they consult all the seed catalogs at hand and the one furnishing the most for the least money gets the order. Another class of purchasers is captivated by catchy pictures with descriptions painted in high colors and out of all proportions to this peculiarity. I do not wish to be understood as condemning all seed houses. Many of our commercial seedsmen have done very good work, and many valuable varieties of fruit and vegetables are in existence today solely thru the efforts of these men. But when any variety ceases to be a novelty and becomes what is commonly termed bulk seeds, interest in that particular variety or strain apparently ceases. In other words, when the plant breeder leaves it and the annual supply of seed is grown by contract, then the trouble begins.

What is the result of this? Selection stops and the strain or variety begins at once to drift back. Only by constant care and selection can type be maintained. To continue this constantly means expense, and expense in production means higher prices for the product. As competition is keen and as the seed dealers know that there is a greater demand for a cheap article, the cheap article is furnished. Aside from the honest and legitimate seedsman, there has appeared also the seed "sharp," a man without conscience or reputation, who goes about the country seeking whom he may devour. One such individual who had been operating in this state recently is now in jail awaiting trial. He could never have sold an order had the farmers been alive to the value of quality as well as price in seeds.

I was talking on this subject at a farmers' institute in this state some years ago when a man asked me what I thought about using cabbage stalks that had had the heads removed and marketed for growing seed. He said he had been asked to sell a quantity on his farm to a party who wanted them for that purpose. My answer I will discuss later. For years I have seen tomato seeds out drying by the hundreds of pounds at a canning house. This seed found its way to the farmers to grow future crops. But is it not all tomato seed? Yes! But the purchaser of that seed received any or all varieties grown in that neighborhood and delivered to that canning house. This condition has all been brought about thru lack of knowledge and indifference among purchasers.

Now the advice is heralded thru various mediums to the farmer to purchase his supply of seeds early and have them tested for percentage of germination. That is good so far as it goes, but often the poorer-bred seeds will give the highest percentage. Weeds sprout 100 percent apparently, but where is the value? What the farmer wants and should have is seeds grown from stock that has constitutional vigor; that has the accumulation of its race behind it for generations. The stock breeder would not think of trying to build up his herd by breeding from any and every mongrel. But that is just what farmers are doing all over our land with the crops they grow. There is no one leak on the farm that is costing more than this indifference to our seed supply. If farmers would pay more attention to this and demand well-bred seeds or breed such seeds for themselves, an increase of crop would be seen out of all proportion to cost of the work.

Some few years ago the writer obtained seeds of a certain strain of tomato from a commercial seed house. The variety was of their own introduction. I sowed the seeds, raised a crop and made my own selection of seeds for the following crop. I then sent to the same house the following spring for another supply of their own growing, of the same strain and variety. This was to test their seeds alongside of mine. This was done in my greenhouse, both samples of seed being sown side by side and on the same day. Both lots grew but the plants from my own seed were double the size of those purchased when both were five weeks old. How do I explain this? Simply by selection. The seeds I saved myself were from the strongest and most vigorous plants in the field. What those that I purchased were from I do not



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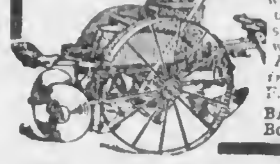

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know. There was also a pronounced difference in the size of those seeds. That is another reason why the plants that grew from the seeds selected by myself were larger at five weeks of age than were those from seeds purchased.

There is another thought, right here that I wish to draw attention to. When nature starts her work she provides for an abundance of seedlings. Thousands start to grow where only dozens reach maturity. It is a case of the survival of the fittest. But when man plants he tries to make all plants come to maturity. Hence, it is important that only such seeds be selected for future crop production that will not only yield a full measure of crop but at the same time be of strong constitution, full of vigor and true to type, fully able to produce just what the grower desires. This can readily be accomplished by the farmer himself if he will give the subject a little thought and careful attention.

Too many farmers, I am sorry to say, are working along the line of least resistance. They continue in the same old rut that father and grandfather made for them a century or more ago. This is a more progressive age; agriculture is an art and a science, and he who solves the most of these problems and applies them will the sooner realize that head work counts for more in the long run than all hand work. Success demands that we use the gray matter that a wise Creator provided us with. In a later article I will attempt to show what has been accomplished and what can be, by breeding from selection.

(Continued in next week's issue)

PRESERVING THE PEACH TREES

One of the most unwise things any farmer can be guilty of is to allow fine peach and apple orchards to decay and become unproductive. In many eastern states apple trees grow and bear abundant crops of fine fruits for fifty years or longer, but in some of the western and southwestern states the trees bear heavily from about the fifth to the twelfth years, after which the fruit becomes smaller every year, and the trees are allowed to die gradually. This generally means that the properties in the soil which gave luxuriance to the trees and sweetness and color to the fruit become exhausted, and as these properties are not fed back to the soil in the form of commercial fertilizer there is nothing to nurture the trees, and they die a lingering death. What really happens is that they starve.

When I was a small boy my father bought a tract of sandy, timber land in a western state, and opened up a farm, and as soon as he got enough land clear of stumps he put five acres in fine peach trees. These trees commenced bearing plentifully when about four years old, and continued to bear heavily until they were about eight years old, and never since then have I seen such loads of fine peaches as we had at first.

When the orchard was about eight years old the trees began dying rapidly, and within two or three years the greater number of them were dead. The others bore decreasing crops of fruit for a while longer but thirteen or fourteen years after the trees were planted, practically all of them were dead. They had been planted only about fifteen feet apart, which was entirely too close, and this was one reason they exhausted the fertility in the soil so quickly and died so rapidly. They grew luxuriantly, until they had exhausted the fertility in the soil from which they fed, when they died by the hundreds.

We had planted the orchard merely for our own domestic use, so didn't make a study of the soil to see what elements were being exhausted, and then to supply them, as we were in debt for the farm, and therefore giving our attention to crops which yielded the best profit; but we sadly missed our fine peach orchard when the trees were all either dead or almost barren.

This first experience with peaches was made when I was a small boy, but I can easily look back and see that we used very poor judgment in the way we treated our trees and the ground on which they stood. In the first place we allowed them to bear full crops of fruit while they were young and the limbs weak and slender, and this retarded their growth and made the trees low and squatty, the low limbs drooping over towards the ground, so that we couldnot get into the orchard with a horse and plow to cultivate it. The result was that the ground became hard baked, and the orchard grew up in tall weeds which helped to exhaust rapidly the fertility in the soil, and also the moisture, during dry summers.

Whether your orchard is a small one for domestic use, or a large one for supplying the distant market, it should be pruned severely while the trees are young. All the low limbs especially should be cut off; the limbs which show a disposition to bend over towards the ground. This will give the tree a straight, upward growth. Also a good many small limbs should be cut out within the crown of the tree, so as to give a thin, open appearance; when the young trees first begin to bear it calls for a good deal of courage and decision, I know, to cut off a considerable portion of the fruit while young and green; but this is the only thing to do, if fine sturdy, straight and tall trees with no drooping limbs are desired. With such trees one can readily use a plow or a one-horse harrow, in the case of young trees, for cultivation purposes. The very worst treatment for young trees is to allow them to bear heavy crops of fruit at four and five years old. Not only is their vitality sapped by allowing all the fruit to stay on the trees, but the limbs acquire a low drooping form, under the weight of these excessive loads of fruit, which absolutely prevents getting near enough to them to stir the soil. As the trees grow older all low limbs which show a tendency to bend back towards the ground should be cut off unmercifully, no matter if it means getting rid of more than half the crown. If the pruning be done in the late autumn, and the cut places painted over, no serious injury will result, but be careful about pruning too severely in the spring. Especially should cutting off too many large limbs be avoided at this time.

At the present day, with good markets, intensive farming and co-operative selling, a farmer is very unwise, not to say foolish, who allows a fine orchard to fall into ruin in a state or section where the soil shows this early impoverishment. If he does not understand what elements should be given back to the soil to replenish the waste he should get in touch with a government experiment station, or a state agricultural college, or else he should get bulletins from the United State Department of Agriculture, and learn how to save the lives of his trees. By so doing he will add materially to his bank account and greatly increase the enjoyment and luxuries of the farm home for himself and family.

No good reason exists why a peach or apple orchard should not be as long-lived in the west as in New York State or New England, and it will be if the farmer brings to the preservation of his trees ordinary judgment and good sense.—I. H. Motes, St. Louis, Mo.

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In the top eight inches of average soil there is enough plant food in the form of nitrogen to last for 90 years, in phosphoric acid for 500 years and in potash for 1000 years.

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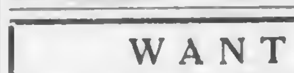

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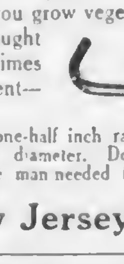

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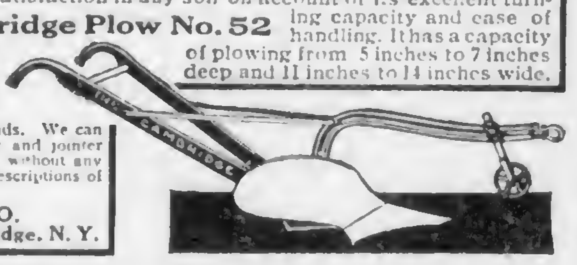

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the most important machine used on the farm

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NEARLY EVERY PIECE OF farm machinery is only used a few weeks during the year, if that long, and when it is used simply saves time or labor over some other way, with comparatively little difference between makes of such machines except in design or size or possibly that one is better made than another and so lasts longer and probably costs more proportionately.

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THIS IS THE VERY GREAT difference that makes the cream separator the most important of farm machines, the most wasteful or the most profitable, because used so often and involving a waste or a saving every time it is used. This is the reason why there are more De Laval separators in use than any other kind of farm or dairy machines the world over, and more than all the other makes of cream separators combined.

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$24 Buys the New Butterfly Jr. No. 1. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 5 1-2 shown here.
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The Dairy

OTHER CROPS THAN CORN AS ENSILAGE

Until within the past year it was my belief that the alfalfa plant could not be put in the silo and successfully made into ensilage. I had seen corn and alfalfa tried as a mixture but they were hard to get distributed evenly, hence when the ensilage came out of the silo the alfalfa which had not been thoroly mixed with the corn came out moldy and spoiled. Last fall I went up into Bradford County and there spent some time with one of the many successful farmers of that county who has tried out experiments with ensilage by putting other crops than corn into the silo.

Many farmers in this state who are growing alfalfa have found trouble in getting it cured. Especially is this true of the first and last cuttings. This farmer has solved the curing problem by putting the alfalfa by itself into the silo. The alfalfa is cut at the regular time of cutting and just as soon as he can get to it the alfalfa is put in the silo; being cut into short lengths in the same ensilage cutter he uses for corn. On account of the alfalfa tending to go thru in bunches, he uses an elevator instead of a blower to get it into the silo. It is levelled and tramped in the same manner that corn silage is. On account of shortage of pasture this man uses soiling and ensilage largely to feed his cows in summer.

The alfalfa silage comes out as sweet and free of mold as any corn silage I have seen, and the cows find it just as palatable. On account of its high food value it lessens this man's grain bill considerably. This use of alfalfa does not seem to be new, for since visiting this farmer I read in one of the western dairy papers of a man in California who owns 100 Jerseys and raises a large amount of alfalfa which he puts into the silo instead of making it into hay.

This same Bradford farmer has ensiloed other crops. One season when he expected to be short of ensilage, he had several acres of wheat which did not look as if it would give much of a grain yield. So he thought he would try putting it into the silo. As soon as the grain reached the dough stage he cut it and hauled it directly to the silo, running it thru the cutter and elevating it in the same manner he does his corn. It made good sweet ensilage which the cows found palatable and on which they yielded a good flow of milk. He had tried rye in the same manner but the ensilage was not as good and it caused the cows to shrink in their flow of milk. Still another crop used successfully to make ensilage of was oats and cowpeas, grown in the same manner and cut at the same time he cuts it for hay. He allows part of the crop to mature and has it threshed for his own seed.

This farmer has never tried planting soy beans with the corn that he puts in the silo, but this practice is followed extensively in some of the middle western states. This system gives a greater yield of ensilage to the acre and ensilage higher in protein than the ordinary corn silage. Tests by the Illinois Experiment Station showed that where corn was grown with the soy beans, the corn plant itself had a higher percent of protein than where grown by itself. The experience of this farmer ought to be valuable to other farmers of Pennsylvania who are having trouble in getting their alfalfa cured or who expect to run short on corn for an ensilage crop and have some other crop that could be suitably made into ensilage.—H., Bradford Co., Pa.

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He knows material and construction from A to Z.

He knows a good thing when he sees it, in separators as well as automobiles, having studied farming intensely as well as mechanics.

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The New Galloway Sanitary Cream Separator is made so good in my factory that I will send it anywhere in the United States without an expert to any inexperienced user for a ninety day free trial to test against any make or kind that even sells for twice as much and will let the user be judge, because it's the most modern—the most sanitary—the most scientific—the cleanest skimmer—the most beautiful in design of any cream separator made today and I have seen them all. Write me and I will tell you how to make money in the dairy business when the pastures are dried up in summer. I did it on my own farm and know. Get my proposition now. It's so good that no dairyman who owns two or a hundred cows can afford to be without it. All I ask you to do is to first get my proposition before you decide to purchase any cream separator of any make, kind or at any price. Just drop me a postal. Address

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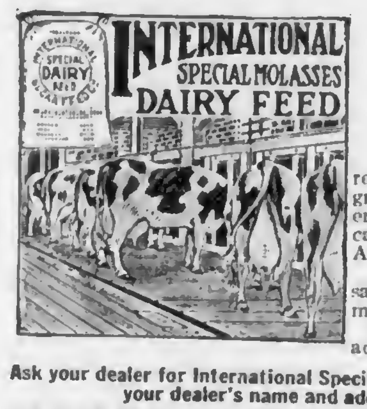

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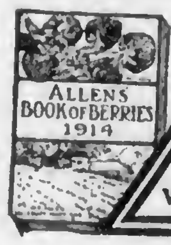

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Read what the owner of Sophie 19th Champion Jersey Cow of the World says.

Hood Farm, Lowell, Mass.
January 22nd, 1914.

The Quaker Oats Co., Chicago, Ill.

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Very truly yours,
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Sophie 19th
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Milk	17,557 lbs.—12 ozs.
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Total Record For FIVE YEARS

Milk	64,253 lbs.— 2 ozs.
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In 30 days' test she produced 2983.9 lbs. of milk and 165 1-2 lbs. of butter. Her one day record is 108.6 lbs of milk and lbs. of butter. One week record (7 days) 696.1 lbs. of milk and 41.675 lbs. butter. Milk test 4.70 per cent butter fat.

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Her official record for 365 days is 27432.5 pounds of milk, and 998.26 pounds of butter fat.

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Schumacher Feed

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Surely the feed that has proven **best** for the **best** cows in all the world, is **best** for you. If you have never tried **SCHUMACHER** we urge you to try the following—a feeding plan that has done more to make dairying profitable than all others combined.

Try This Feeding Plan Now

Mix three parts of **SCHUMACHER** with one part of any good high protein concentrate you are now feeding—such as Gluten, Cottonseed Meal, Distillers' Grains, Oil Meal, Malt Sprouts, Blue Ribbon Dairy Feed, and note the results. You will be surprised at the way your cows will lick it up eagerly—thrive on it—improve in condition—and increase their milk yield. **SCHUMACHER** contains that variety of grain products which you know are so essential and which give that stamina so necessary to withstand the strain of heavy milking. The **SCHUMACHER PLAN** of feeding will increase your dairy profits, make every cow improve her record and cut down your feed bills, too. Try it. Get it at your dealers.

Read What the Owner of the First 40 lb. Cow in the World Says:

Finderne Stock Farm,
Finderne, N. J.

The Quaker Oats Co.,
Chicago, Ill.

Gentlemen:—During the past two or three years we have been feeding your **Schumacher Feed** and have secured splendid results. **Schumacher** was incorporated in the ration of Valdessa Scott 2nd during her wonderful result producing test.

Used as a base with a good protein concentrate it is a winner.

Yours truly,
B. MEYER, Owner.

Read What the Owner of the World's Champion Long Distance Cow Says:

Springdale Stock Farm—
Home of Colantha 4th's Johanna

The Quaker Oats Co.,
Chicago, Ill.

Gentlemen:—Replying to yours of the 3rd, we are making **Schumacher Feed** one-third part of our herd ration and we are getting results. Several of our cows are milking up to over 75 lbs. per day with this part of our grain ration.

Yours very truly,
W. J. GILLETT,
Rosendale, Wis.

(26)

Auchenbrain Brown Kate 4th
World's Champion Ayrshire Cow
She gave during the year 23,022 pounds of milk or 10,820 quarts at a cost of less than 1¾ cents a quart, making an income from her milk, above cost of feed consumed of $541.

Read!

Narberth, Pa.,
December 6, 1913.

The Quaker Oats Company,
Chicago, Ill.

Gentlemen:—We have been feeding your **Schumacher Stock Feed** to our Ayrshire and Jersey cows which are on test for Official Records, and like it mixed with other grains. Our World's Champion Ayrshire Cow, Auchenbrain Brown Kate 4th, who has just finished her year's work with a record of 23,022 lbs. milk and 1080 lbs. of butter, was fed **Schumacher Stock Feed** as part of her ration. We find that **Schumacher Stock Feed** is one of the best feeds we have ever used in our mixtures

Yours very truly,
(Signed) E. S. Deubler, Superintendent, PENSHURST FARM.

Johanna DeKol Van Beers
The Second 40-Lb. Cow
60 days, milk 5,552.00 lbs., butter 290.00 lbs.; 90 days, milk 8,147.90 lbs., butter 418.13 lbs.; 100 days, milk 8,987.40 lbs., butter 460.19 lbs.; 120 days, milk 10,490.00 lbs., butter 540.97 lbs.; 7 Day Record, milk 663.00 lbs., butter 40.32 lbs.

Read!

Brookline Farm,
Dec. 8, 1913.

The Quaker Oats Co.,
Chicago, Ill.

Regarding **Schumacher Stock Feed,** will say as a feed for dairy cows or young cattle I know of no feed equal to **Schumacher.** It certainly contains all the ingredients necessary to put the finish and gloss on an animal and more than that the results obtained through the pail makes it the cheapest feed that I have ever fed. Johanna, in fact all my cows are fed every day a ration of **Schumacher Feed.** To any one feeding cattle for show, I would especially recommend **Schumacher.**

Yours truly,
T. E. GETZELMAN, Prop., Hampshire, Ill.

Read Also What the Man Who Raised Johanna DeKol Van Beers Says:

"We have been feeding **Schumacher Feed** for a number of years and ordered another car for part of our grain ration this year and like it very much. We raised the cow Johanna DeKol Van Beers, (the world's second 40-lb. cow) that was sold for $7000.00, and also the heifer Cedar Lawn DeKol Johanna that made 25 lbs. butter in 7 days, 707.93 lbs. in 365 days, at 2 years, 2 months of age. Hoping that you can always supply us with feed."

Yours truly, C. A. SCHROEDER & SON, per H. F. Schroeder, West Bend, Wis.

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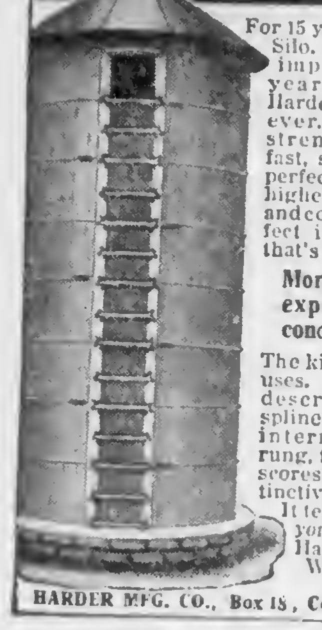
The Quaker Oats Company, Dept. 21, Chicago, U.S.A.



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Registered Jersey Cattle and Single Combed Buff Leghorn chickens Eggs for hatching. $1 per 15. J. W. Realuck, Rt 7, Danville, Pa.

CAN A COW HOLD UP HER MILK?

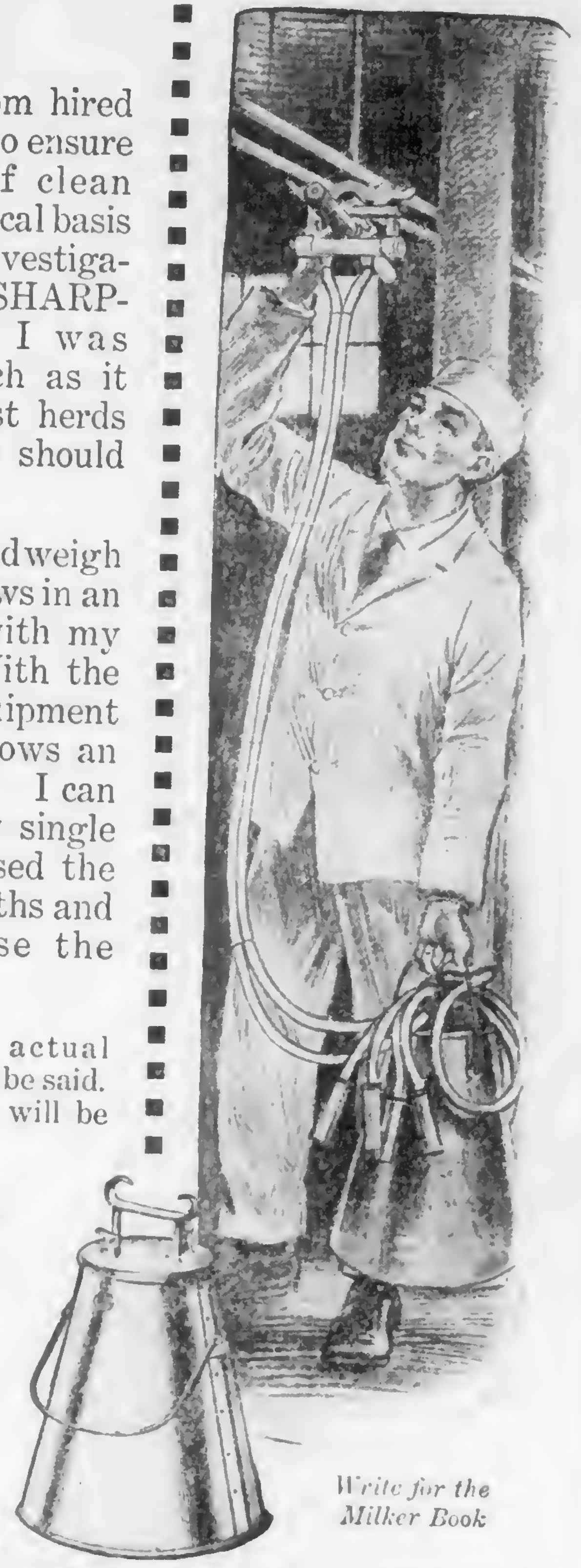
Is it true or not that a cow can hold up her milk at her own will? I have one with her second calf and it bothers me greatly to get her milk. When it does start she cringes, shakes her head and acts very uneasy. She has been in milk about four months and this season I fattened the calf by letting it suck the cow. Now is there any remedy? I fear she will dry up entirely.—W. H. M.

The question is practically answered in the letter, because this cow does hold back her milk and, as a matter of fact, every cow can largely control her flow of milk. The cow gives milk simply from the desire of nourishing her calf. She doesn't give it for the fun of it, nor because she is obliged to particularly. Of course nature provides that when a cow first freshens, or any other female for that matter, a certain amount of milk must flow, but unless proper conditions are provided the cow will go dry in a short time, and sometimes the milk flow never starts at all.

In this particular instance I think the difficulty was brought by having the calf suck the cow too long. She got accustomed to having the calf suck her and undoubtedly, since she cringes when she is being milked, her teats got sore or chapped. The calf leaves the teats wet and, if the cow is exposed to a cold dry wind, the teats will chap; then when she is being milked it hurts. It is probably not a pleasant sensation for a cow with sore teats to have them squeezed hard enough to get the milk out, consequently she does not relish the job and she holds up her milk. I would never let a calf suck a cow that I intended to milk more than one or two times; then take the calf away. Let it suck once or twice to get the first milk of the cow, because this is essential to the health of the calf. After that the calf is better off if you teach it to drink and the cow is milked. The cow is a great deal better off because she at onces becomes accustomed to hand milking. Almost invariably, if you let a calf suck a cow four or five weeks, there is trouble in getting the cow to give down her milk when you begin to milk her by hand. This is especially true with a young cow.

The proper thing to do in this particular case is to get some linseed oil or an ointment of some sort and apply to teats to take the soreness out and heal up the cracks or chaps. This will help out very much. Then by being careful with the cow and coaxing her a little, getting on the right side of her by getting her confidence as much as possible, you can, by persistent work, get her to give down her milk and gradually increase the yield until she gets up to a normal flow. No one yet has ever succeeded in getting a cow to give a liberal flow of milk by trying to force it from her. It can't be done. The cow refuses to give down her milk as the saying is, and will eventually dry up if you don't get her confidence.

The better a cow is used, the more gentle you are with her, the more you coax her, the more you teach her to like you, the more readily will she give down her milk and the larger yield will she give. This is one reason why the milking machine is sometimes said to be inferior to the good milker. It is, but there are really few good milkers. The milking machine does not hurt, and the cows give down their milk without being in any way distressed by the operation, while some hand milkers do hurt cows cruelly. The milking machine is better than a poor man, but a real good man is better than a milking machine.—C. C. L.



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We have a few choice registered Guernsey Bull Calves for sale from A. R. cows by prize winning bulls. Our herd bull was Grand Champion at Trenton Fair last fall. We also had Grand Champion Guernsey cow.

Write for sale list with breeding and description or better yet pay us a visit.

ELLENWOOD FARM
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Live Stock

LAMBS WITHOUT GRAIN

I spent a year in northern Pennsylvania, and from memory of conditions there as well as from what I have since read, it seems to me that it is an excellent sheep country. I believe that for raising sheep the locality and conditions are far superior to our own in the corn-belt.

The internal parasite is the bane of the shepherd in this latitude. Eternal vigilance must be exercised to keep the ewe flock vigorous, and actual prevention is the only thing that can avert much loss of lambs in many flocks. I find that lambs may be dropped much later in northern latitude and yet thrive and attain good weight ahead of our early-dropped lambs. I believe that the absence of corn in large amounts on your farms need cause no positive hindrance to profitable production of native lambs. I know of cases in Pennsylvania where farmers have acquired quite satisfactory grazing land for $5 to $10 per acre. Yours is an excellent oats country. Stock farming with a little lime will put the land to raising clover where it may not now thrive.

The relatively greater profits to be had in hog raising make sheep a doubtful adjunct in our farming; but we require some live stock to work up our clover hay, some fodder, and pasture lands not desirable for plow purposes. We have been able to maintain our flock of 100 grade Shropshire ewes on grass until January 1 each year, and by sorting for vigor and condition need feed little until February. During the next three months we feed corn and oats moderately, as our lambs are dropped during March.

All sheep and lambs go to pasture early in May. We wean the lambs in August (early). Our flock of 90 lambs this season was given half a bushel of oats twice a day for a fortnight after weaning, to start them, and to get them to form a habit of coming to water. We fed no more grain until the middle of November, and not over 50 bushels before selling the lambs the middle of December at $7.25, averaging 92 pounds.

Our grain is more profitable when fed to other live stock, therefore we endeavor to make sheep and lambs the consumers of bulky feeds alone. The $775 that we receive from lambs and wool is largely to pay for that mass of bulky material that many are tempted to sell from the farm. Our lambs must be dropped early here or they will grow stunted and weak; we positively must not feed them grain or they grow too heavy before the price is restored after the range run. They graze our meadows and stubble fields, saving us the clipping, and attain plenty of size and flesh by the time we want them sold,—the grain consumed is slight.

You have cheap grazing land in northern Pennsylvania; you can raise much better oats than we can and you have the Buffalo market at hand. If dogs annoy, inclose your pastures with "wolf proof" fence, or the whole farm for that matter; for fence of some kind you must have. Let some enterprising man who has failed with sheep in northern Pennsylvania tell us why.—Geo. P. Williams, Delaware Co., Ohio.

CARE OF BROOD SOWS AND THEIR LITTERS

I have my brood sows farrow two litters of pigs per year. When a sow proves to be a profitable one she is generally kept for breeding purposes as long as she raises a litter of pigs successfully. In the summer and fall a dry pen and a little chaff are about all one needs to prepare for the sow at farrowing time. In the winter and early spring, a warm comfortable pen is also required, or many of the little pigs are likely to chill and die; especially if the sow farrows during a cold night with no one in attendance. Not many persons fancy sitting up with a sow during a cold night, but if the pigs are placed as fast as born in a small box in which a piece of old blanket is placed in the bottom, and another piece over the top until the pigs get dry, they are not likely to chill. Sometimes when the pen is very cold it is a good idea to take the box of pigs to the house and place beside the stove until dry. It pays to try and save as many pigs as possible when they bring the price they do now.

After farrowing, if the sow gets up and comes to the trough at feeding time, she is given a light slop the first day, generally about a half pail of separator milk and warm water, with a little bran put in. In winter, a warm slop is fed for several days after farrowing, and the grain ration, which generally consists of mixed ground grain and bran, half and half, is gradually increased until the sow gets about all she will clean up when the pigs are about four weeks old.—C. R. Weidle, Erie Co., Pa.

FLOCK OF 90 LAMBS AVERAGING 92 POUNDS EACH AND SELLING AT $7.25 PER CWT. FED NOT OVOR 50 BUSHELS OF OATS.

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The high grado of animals sent to the various stock shows of the present day makes it imperative that special care be exercised in the fitting of stock for such purposes. To meet the need of information of this nature the Wisconsin Experiment Station at Madison, Wis., has issued its Bulletin No. 232 under the above heading, which of course, deals only with sheep and lambs but treats the subject thoroly.

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They are healthier and give better service. When the heavy coat that holds the wet sweat and dirt is removed, they are more easily kept clean, look better, get more good from their feed and are better in every way. Horses and mules take on new life and energy when clipped and naturally work better. Clipping the flanks and udders of cows prevents the dropping of filth into the milk. The best and most generally used clipper is the Stewart Ball-Bearing Clipping Machine, the only machine that can be used on horses, mules and cows without change. It turns easier, clips faster and closer and stays sharp longer than any other. Gears are all file hard and cut from solid steel bar. They are enclosed, protected and run in oil; little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade.

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Philadelphia, Pa., March 7, 1914.

Platform Issues

Political parties and prospective candidates are now busy formulating party platforms and evolving "vital issues" upon which candidates for state office will be selected at the coming primary election. Meanwhile the common people to whose "call" the candidates are so unselfishly responding and in whose "interest" the campaign issues are being defined, are setting back and merely awaiting results. Next winter, after the officials are securely in office, the common people will discover a large list of needs and desires, and will storm and bluster and "demand" consideration. They will receive just the kind of consideration they have received in the past and just the kind they will continue to receive so long as they wait until after the election before pressing their demands. The time to secure consideration from a candidate is while he is still a candidate, and while he feels the need of the support of the voters to secure election. Pennsylvania is in position to elect a state legislature at the next election that will be peculiarly responsive to the will of the people. The break in the dominant party has developed a condition in which all parties are striving to get closer to the rank and file of their constituents. With three parties contending for office there is going to be greater effort to get down to the actual needs of the people. There are a number of important state issues that will be of general interest to all classes in the next state election. There promises to be several that ought to be of particular interest to farmers. The liquor question promises to be one of the primary issues. This has come to be generally recognized as an economic as well as a moral question, and as such should be under control of local communities rather than the state. Local option, with district option in cities has proved so eminently successful in controling the problem from an economic standpoint, and is so just to all interested parties that it can scarcely be questioned as a thoroly practical solution of the problem. A second issue of general, state-wide interest, but of particular interest to farmers, is a reform system of state appropriations. The state has an income sufficient to meet all reasonable demands for support of public works and state institutions, but because of haphazard methods of making appropriations is under the necessity of curtailing support of needed work. A reform installing a systematic method for appropriations for charities is needed and should be provided at the next session of the state legislature. A special article dealing with the need of such reform will be published in an early issue of Pennsylvania Farmer. State participation in road building is by no means a settled policy. There is widespread dissatisfaction with the way road work has been handled, and a growing conviction that our present state highway organization costs too much money for the work accomplished. Whether the situation demands additional legislation or a reorganization of the department for more efficient work under the present laws must be decided in an early session, and farmers should impress their demands upon the candidates early. Both producers and consumers of food products feel the need of a reasonable control of the produce commission business. Legislation on this feature was squelched in the last session largely because of lack of proper support. Farmers should take this matter up early this year and be prepared to press their needs. These issues should all be discussed in farmers' gatherings and preparation made for some sort of concerted action. These columns are open for the expression of opinion at any time. The main thing is to know what we want as farmers and tax payers, and then go after it.

Home-mixed Fertilizers

The article on page 2 of this issue gives directions for home mixing of fertilizers. The practice of home mixing has been growing in some sections in recent years. Many farmers prefer to mix their own goods for special purposes and to secure combinations of fertilizing elements not offered on the fertilizer market. It is an important indication of progress in study and knowledge of the needs of the soil when farmers begin to interest themselves in the composition of the fertilizers they apply. More fertilizers will be purchased and all of it will be used more intelligently when farmers in general acquire a better knowledge of goods used. The farmer who will go to the trouble of making up his own combinations will also study soil needs and compare results from different mixtures and be able to select fertilizers and apply them more intelligently for future needs. Whether or not there is an actual saving in home-mixing of fertilizers is a question which each farmer must decide for himself according to his local conditions, his knowledge of mixing and his ability to secure the desired combinations from the raw materials available. Comparative tests with small quantities of home-mixed and commercial brands will reveal to each farmer whether or not he can profit by home mixing. It is probable that some farmers will find an actual advantage in home mixing. It is also probable that many others will find that they are giving time and labor to work which is uncertain in its results and paying slight profit on the time spent. There is no better way of determining this for the individual case than by making a small test. We know of farmers who mix their own fertilizers regularly and claim a profit thru the practice. We know of others who have given the home-mixed goods a trial of several years and have returned to the commercial brands. The invariable result of home mixing is a keener discrimination between low and high-grade goods, and the purchase of fertilizers by analysis rather than brand name. The actual contents of available fertilizing elements is the important feature in any grade of fertilizer, whether purchased or compounded at home. The more thoroly this is understood, and the more conscientiously it is followed in the purchase of goods, the greater will be the return from the use of all fertilizers.

PENNSYLVANIA CROP REPORT—1913

The first crop report to be put out by the State Department of Agriculture thru its newly created bureau of statistics will show that for 1913 Pennsylvania had 7,887,900 acres planted with the eight staples of rye, corn, potatoes, oats, buckwheat, hay, wheat and tobacco, and that there were 4,132,500 farm animals. These reports are to be issued yearly and are based on original returns made by county commissioners and crop reporters for the department, affording first hand information. The prices in various counties are also shown and there is an interesting statement on wages for each county. The crop report is as follows:

Crop	Acreage	Production	Av. yield acre	Value
Rye	280,000	4,900,000 bu.	17 bu.	$ 3,626,000
Corn	1,463,000	57,057,000 bu.	39 bu.	41,081,000
Potatoes	265,000	23,320,000 bu.	88 bu.	8,656,000
Oats	1,154,000	35,774,000 bu.	31 bu.	16,456,000
Buckwheat	280,000	5,180,000 bu.	18 bu.	3,781,000
Hay	3,141,000	4,146,000 bu.		61,775,000
Wheat	1,286,000	21,862,000 bu.	17 bu.	19,894,000
Tobacco	38,900	46,680,000 lb.	1200 lb.	3,601,000

The farm animal figures are as follows:

	Number	Value
Horses	584,000	$81,176,000
Mules	4,500	6,660,000
Milk cows	943,000	55,071,000
Other cattle	632,000	7,886,000
Sheep	839,000	4,111,000
Swine	1,130,000	15,594,000

STATE CAPITAL NEWS

The Liability Law.—Steps to secure consideration for the farmers point of view in regard to the employers' liability or workmen's compensation law draft which is to be submitted to the next legislature, have been taken by the Grange and a conference between the representatives of the Grangers and the members of the State Industrial Accidents Commission will probably be held in this city before April 1. The great objection to the bill as laid before the general assembly of 1913 was that it placed the farmer on the same plane as the Pennsylvania railroad or the United States Steel corporation. To all representations that it would be unfair to make the same provisions and scale of compensation for accidents apply the claim was made that exemption of any class would be unconstitutional. It is now intimated that the lawyers behind the compensation bill believe that some agreement can be made whereby the remuneration proposed by law to those killed or maimed in the great industries with their numerous hazards shall not apply to the farmer or small manufacturer, and that a bill which will care for those who suffer in the stress of modern manufacturing and not strike hard on the man who makes little more than a living for himself and his family can be framed.

As To Child Labor.—Similarly, no attention has been given to rural conditions in the discussion of legislation affecting the employment of children. There are times on the farm when every hand is needed from morning until night to save crops and it would be preposterous to make a fruit grower or farmer liable to a heavy fine when he found it necessary to employ every pair of hands he could find to save his crops, on a scale of hours exceeding that which legislators framed to meet conditions in a textile mill or a cigar factory which goes on the same rate the whole year round. Again, it has been pointed out that the average teacher in the country stays but a few years and that the issuance of certificates should be in the hands of the permanent school officials who know the community, the children and the conditions.

The Traction Engine.—In all fairness it should be stated that if the people who are condemning the regulations for the operation of traction engines and those who make the regulations could get together for an amicable talk it would do more toward straightening out the questions involved before the roads get in shape for engines to travel, than all the resolutions passed, the speeches made and the lawyers employed could accomplish. There is complaint that the regulations of the State Highway Department are too strict and that they will prevent engines traveling without such expensive precautions or appliances as would force owners to charge the farmers more for their services. On the other hand the department officers and some supervisors claim that the engines have cleats that tear up the roads. Two representatives of the traction engine makers and the highway commissioner had a conference the other day during which the makers' representatives made threats of law tests and the official retorted that of 224 traction engine owners who had taken out license but 3 had made protests.

Demonstrators.—The orchard demonstration work of the State will be started about March 15, if the weather permits. It is expected that it will be on a more extensive scale than formerly owing to the fact that five men have been added to the force in the field. As usual the demonstrators will begin in southern counties first and be extended to the northern tier.

State Aid Roads.—Highway Commissioner Bigelow has announced that this spring he will let contracts for probably a dozen road improvements under the State aid plan. Numerous applications for state aid have been made to the department and the plans and specifications are now being made. The funds for construction of roads by state aid are the only ones of any size available now.

National Road Aid.—While everyone is in favor of national aid for road building there is a decided disposition manifested for a system which will enable all districts to participate. The legislative committee of the State Grange favors an automatic basis, something like the State school appropriation, money spent to be audited and results obtained that will be lasting. Unfortunately, the experience of Pennsylvania has been that local authorities do not always give the best of care to maintenance and what is needed is a well founded system that will bring results. The present state system of piecemeal aid to townships and nominal aid in supervision pleases no one. Many folks favor repeal of the township road law of 1913, altho as yet it has not been fairly tried and can not be until legislators cease from caring for hospitals and charities which should be supported at home and devote money for public improvements in such amounts as can produce something tangible. Enough money has been frittered away in the name of good roads in Pennsylvania to lift many townships out of the mud.

Commodities Act.—The state chief of standards, James Sweeney, comes back at those who oppose the commodities act fixing standards of weight for st commodities, by saying that the demand for such an act was justified in the inspections made by sealers of weights and measures in various parts of the state last year. In 202,501 tests of scales, liquid and dry measures, milk jars, yard measures, weights and oil pumps 16 percent were found to be crooked. Of course, it is not charged that persons owning such measures were aware of the fact. Many of them were imposed upon and as a rule the inspectors found that where people were possessed of false measures or weights they were glad to be apprised of the fact.—Hamilton, Harrisburg, March 2.

NEW YORK LETTER

The Seeds Law.—It is proposed by a bill recently introduced in the legislature to amend the agricultural seeds law as it effects the sale of clover and grass seed, so that the proportion of foul or foreign seed that is permissible shall not exceed three percent by weight rather than by count, as the law now has it. Another bill would appropriate $40,000 for new buildings at the Cobleskill agricultural school.

Fruit Growers Elect.—The township fruit growers' association of Williamson, Wayne County, has elected the following officers: President, W. H. Wood; vice-president, H. M. DeRight; secretary, H. C. Pallister; treasurer, Anthony Lagner. This is one of the most important shipping centers for fruit and vegetables in the state and has grown from a place of no significance in this particular within three years, to one having a large cold storage plant, a basket factory, a canning factory and several warehouses. Over 2300 carloads of fruit and vegetables have been shipped the past year from the township of Williamson.

Co-operative Association.—The first co-operative market association under the recommendation of Governor Glynn was formed at Unadilla this week. The officers are C. O. Potter, president; S. A. Fisher, secretary and Arthur Rowell, treasurer. The organization is framed along the lines of a corporate company and shares are $100 each. Samuel L. Halbert was appointed sales agent. The association covers part of Otsego, Delaware and Chenango counties.

Land Bank Bills.—On March 2 two bills were introduced in the legislature to establish a system of rural credits, erected around the land bank idea. The first would establish a great co-operative bank to act as a sort of clearing house for a system of co-operative credits made up of all the loan and saving institutions of the state. The second would establish a stock bank with a capital of not less than $5,000,000. Either of the bills would carry out the Governor's idea of what the farmer should have to help him to easier credits.

County Highway Bill.—A bill has been introduced in the Assembly which would establish a county highway commission to consist of the county attorney, county engineer or highway superintendent and the chairman of the board of supervisors. It is given power to approve contracts for highway work and no money is to be paid out by state or county until the account is audited by the commission.

Milk Commission.—The sub-committees of the milk commission appointed by the governor have been holding sessions this week at Rochester, Watertown and New York City. At the latter meeting Dr. M. B. McMillan, representing the health department of the city said that recently a number of cases of typhoid fever were traced to milk shipped to the city and the shipper was not allowed to ship any more, but it was found that he had sold his milk up state, exposing others to the same danger. Another physician told the commission that one of the greatest evils confronting the people regarding impure milk was the fact that bad milk after having been rejected by the city authorities was sold to butter and cheese factories and disease germs reached the people just the same.

Cattle Bill Passed.—Senator Godfrey's bill providing that the state shall pay interest on money due farmers and others who were owners of diseased cattle that have been killed by state authority, passed the senate by a vote of 40 to 1. It will be remembered that the legislature appropriated last year $300,000 to pay farmers for stock killed by the state and senator Godfrey said that 75 percent of that amount had been paid into the treasury from the sale of carcasses.

The Legislative Rush.—March 27th is the date fixed for final adjournment of the Legislature. On one day this week 87 bills were introduced in the senate bringing the total up to 702 for the session. Under the Assembly rules no more bills can be introduced after March 1 unless by unanimous consent.

Health Campaign.—The Public Health committee of the state grange has already begun to lay plans for the work of the year. At a meeting of the committee last week with Dr. Biggs, head of the health department, the committee presented its ideas of what should be done to reduce the rural death rate. It asks that a rural sanitary inspector be appointed for each of the 20 sanitary districts of the state and the state department conduct a campaign of education thru the press and in other ways in order to arouse public opinion on the necessity of better rural sanitation and hygiene. Dr. Biggs assured the committee that the plan suggested would be carried out if funds permitted. There should be no trouble about funds in so important a matter as reducing the death rate in rural districts which now is more per thousand of inhabitants than in New York city. The able report made by the committee to the state grange at its recent meeting will be circulated by the state health department.

News Items.—A joint legislative hearing on the hydro-electric bill will be held on March 3. The threshermen have won their point on the use of traction engines for farm purposes on the state highways. Seymour Van Santvoord, of Troy, has been appointed to the public service commission which appointment receives general commendation. W. A. Mallery, of Columbia county, has been confirmed as fiscal supervisor of state charities, to succeed S. J. Tilden, deceased.—D.

MARYLAND NOTES

The State Grange Executive Committee has approved the plans of President H. J. Patterson for the erection of a permanent State Grange Home at College Park as a memorial to O. H. Kelly, one of the founders of the Grange. It is estimated the building will cost $15,000.

The 41st annual convention of Montgomery County farmers was recently held at Sandy Springs. The increase in taxes, and "what is the best solution of our county public school system;" the million dollar appropriation for the Maryland Agricultural College; and the high cost of road construction were some of the questions discussed.

The farmers' institutes of the State are better attended this winter than ever before, many farmers and their wives traveling many miles to attend. Dr. Richard S. Hill, the director, caters to the requirements of the respective sections. Men who have made marked success in the counties are secured as speakers, adding greatly to the local interest of the meetings.

The Castle Hill Orchard Company was recently organized at Snow Hill. The Company has 243 acres on which 18,000 apple trees are being planted. The trees will be planted far enough apart to alternate with peach trees as fillers. Intercropping the rows with truck crops is to be followed the first few years. Varieties to be planted are 7,800 Stayman Winesap; 2,800 York Imperial; 2,800 Gano and 4,000 Greenings, and Yellow Transparent, and Early Red.—G. O. B.

VALUABLE FREE CATALOGS

Waterproof Clothing.—Every farmer at some season of the year or in certain kinds of work has need of waterproof clothing. It saves health and money. The new catalog No. 411 recently issued by A. J. Tower Co., Boston, Mass., lists a full line of waterproof slickers, coats, fish suits, overalls, aprons, ponchos, hats, caps, etc., all of the famous Towers Fish Brand. The catalog will be sent free upon request to the above address if you say you are a reader of Pennsylvania Farmer.

Easy Monday.—This is the title of a neat folder being sent out by Dodge and Zuill, 5083 E. Water St., Syracuse, N. Y., describing their line of "Easy" washers, wringers, cleaners, etc. The booklet shows how these devices for the washroom have taken the drudgery out of wash day, and accompanying testimonials show they are saving work to thousands of farm women. A postal card request addressed to the above address brings the folder free.

The Saratoga Silo.—A neat 25-page catalog is now out describing the Saratoga Silo. Some of the distinctive features of this silo are the round, hinged door requiring no taking down, portable platform to be attached at any door, portable steel ladder and safety hoops and lugs. The catalog will be sent free upon request addressed to Saratoga Silo Mfg., Co., Box M, Saratoga Springs, N. Y.

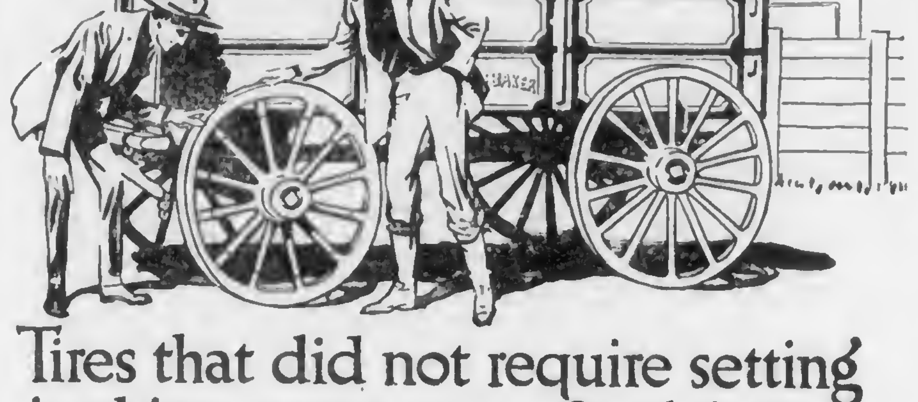
Haines Furniture.—The new Haines Furniture catalog contains many startling bargains in household furnishings including rockers, couches, bed room suits, beds, springs, and mattresses, dining room and office furniture, dishes, etc. The catalog is free upon request to the Linwood Haines Co., 99 Federal St., Camden, N. J.

Corn Contest.—The Bowker Fertilizer Co., will conduct a Better Quality Corn Contest this year. $500 are offered to the man, woman, boy or girl, who can raise 150 bushels of crib-dry shelled corn to the acre. If no one reaches this yield the money is divided into several prizes and awarded according to yield. Write the above company at 43 Chatham St., Boston Mass., for a copy of the rules and get into the spirit of making your acres earn their keep.

The Modern Cultivator.—Few lines of manufactures have shown greater progress in the last decade than the manufacture of agricultural implements. The evolution in farm machinery and the point of perfection reached in modern implements is shown in a most interesting and instructive 72-page booklet compiled by the S. L. Allen & Co., manufacturers of the famous Planet Jr., line of implements. Sixty farm and garden tools covering the whole range of cultivating needs, are here illustrated and described. The booklet is sent free upon request to S. L. Allen & Co., Box 1202E, Philadelphia, Pa.

Buying Paint.—Buying paint for your buildings is like buying clothes for yourself. You buy both to give protection and improve appearance. In the coat you want goods that will wear well and look well. In paint you want the same qualities. In both, the guarantee and character of the manufacturer back of the product are qualities of value. An advertisement in another column of this issue tells you how to get the Ingersoll Paint Book and save money.

Studebaker
WAGONS BUGGIES HARNESS



Tires that did not require setting in thirty years—on a Studebaker

AFTER thirty-six years of constant use Mr. William H. Horton, of Nineveh, N. Y., writes that his Studebaker farm wagon is as good as ever.

The wheels of Mr. Horton's wagon were run for thirty years without setting a tire. Mr. Horton writes:

"I have a Studebaker wagon purchased in 1877. The wagon now bears the original number and name of dealer; No. 33,435. Sold by Daniel Mann, Cobleskill. This wagon has had constant use since date of purchase and the wheels, were run 30 years without setting a tire. The wagon is in good condition today."

WHAT IS THE REASON FOR THIS?

The fact that Mr. Horton used his Studebaker wagon for thirty years without setting a tire means that the wheels were properly built. Its hubs, spokes and felloes were all made of the best materials.

Anyone could have bought them and built them into a wheel, but Studebaker not only build of the best, but they season their materials properly, and then combine these materials in a scientific manner so as to distribute the strain over the entire wheel and therein lies the reason why the Studebaker wagons run so easily and last so long.

The fact that the wheel material is properly seasoned, dipped in oil and built in the Studebaker way is the reason why Studebaker's tires stay on for thirty years and often times longer.

You will be making a good investment when you buy a Studebaker wagon, a Studebaker Buggy—or Studebaker Harness. They are the best you can buy—and outlast others.

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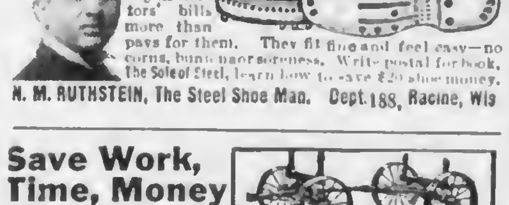

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N. M. RUTHSTEIN, The Steel Shoe Man. Dept. 188, Racine, Wis

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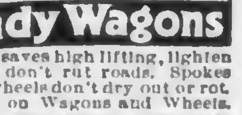
By using our low down steel wheel wagon



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Ammonia	Phosphate	Potash	Nitrate of Soda	Animal 7-15 Tankage	Acid Phosphate 14 per cent Available	Potash Muriate	Unnecessary Filler (dry loam can be used)	F. O. B. New York or Boston	F. O. B. Baltimore
	10	5			1450	200	350	$13.16	$12.68
1	8	5	50	150	1100	200	500	$14.81	$13.98
2	8	5	100	300	1000	200	400	$18.00	$17.25
3	8	5	200	300	1000	200	200	$20.55	$19.80
2	8	10	100	300	1000	400	200	$22.10	$21.35
3	8	10	200	300	1000	400	100	$24.65	$23.90
3	6	10	200	300	700	400	400	$22.78	$22.25
4	6	10	300	300	700	400	300	$25.33	$24.80
4	7	8	300	300	850	350	200	$25.24	$24.60
5	7	5	300	600	700	200	200	$26.33	$25.80

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All our fertilizer materials specially manufactured for Home-Mixing, giving an excellant drillable mixture.
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Brooding Devices

PROF. A. L. CLARK, New Jersey Experiment Station

This is an all important subject at this time of the year. Many persons are for the first time embarking in chicken raising. Many who have had more or less experience are considering whether it might not be better to change their method or when enlarging their equipment are wondering what kind to get.

The brooding equipment is the most important investment in any poultry plant. This is the part of the business that is most often responsible for the failure of the plant. It has always been held that the replenishing of the stock was the most difficult branch of the business. It is the pitfall of the beginner and the stumbling block for the experienced.

Brooding Systems For Large Flocks

There has nothing yet ever superseded the long brooder house with hot water pipes running thru it to heat the hovers for large numbers of chickens in cold weather. Within the last few years great improvements have been made in brooding devices so that now it can hardly be said that these long houses are economical for less than 1500 or 2000 chicks. The best houses for such equipment are made with an even span roof 6 feet high at the plates and 10 feet at the ridge. Sixteen feet wide will give an alley way of two feet long one side with hover room three feet wide and runs in the house eleven feet long. If one remembers that fuel is costly and that the house and hovers must be kept warm in Winter weather, it will be seen that the extra cost for tight walls and care in building are advisable. Many brooder houses are built with double walls but after much experience with rats in old buildings of this kind I advise double boarding the walls on the outside with paper between. The roof should be of shingles as they offer more protection from the cold in Winter and from the extreme heat in Summer. The rafters should be braced across and then sheathed over on the under side about a foot above the plates. This will give a seven foot headroom and an air space in the peak. Every brooder house built for permanent use should have a concrete floor and be set upon a concrete foundation. Do not hesitate about concrete being cold or damp. If several inches of cinders are placed under the floor and the surface of the floor made six inches higher than the ground level outside there will be no danger. Of course the floor of the brooders should always be kept covered with sand and litter. Glass should be used plentifully along the front for light and an occasional muslin curtain will not be out of place.

In laying the pipes for overhead direct heating they should be about 6 inches above the floor at the end near the heater and rise to 12 inches a hundred feet away. It is best not to run pipes over a hundred feet long. Two-inch iron pipes are generally used and if six are laid, three to carry and three to return they should furnish enough heat. The return pipes should be laid alternately between the feed pipes. A space of a foot should be left between the back board of the hover and the first pipe and the pipes should be 4 inches between centers. In the middle between the first three and second three leave eight inches. This gives room to pick up dead chickens etc. The back board should be removable so as to render cleaning easy. In this way the litter and droppings can be swept right out into the alley way. If a common bran sack is ripped in half it will make two covers to nail on to two inch strips and so form frame coverings for the hovers. This burlap is the best material to use as it provides ventilation and still keeps in much of the heat. This burlap curtain should cover only the top surface of the pipes. The foot space between the first pipe and the back board should be covered by a wire screen. From the front and back edges of the frame short slit curtains ought to hang so as to provide against drafts. These can be made of oil cloth or regular awning trim can be secured all hemmed.

The partitions can be made every five feet and thus allow room for a hundred chickens in each apartment. A solid board should form the partition in the hover with one inch mesh wire between the runs. Such a brooder house can be built complete for from $1,500 to $2,000. The material will cost $1,000 to $1,500. Ship-lap yellow pine will answer very well for the first boarding and when covered with building paper, six inch N. C. Roofers will make a very good outer weather boarding.

For underneath hot water piping it is doubtful if one can install a system himself as cheaply as the manufacturers. There are several firms that make a specialty of making and putting up Mammoth brooding systems with underneath pipes. They have all the castings and parts made in large quantities and know just how to put them up cheaply. Whether there is much preference between overhead and underneath pipes in service and economy is doubtful. The overhead is the cheaper and perhaps a little more convenient.

Large Colony Brooders

For years people have been experimenting with large flocks in brooders. A number of years ago the New York State College of Agriculture brought out the gasoline colony brooder house. This has become a very common method in the East and has given the majority of its users excellent satisfaction. Complete directions come with burner parts for building and setting up. The brooder will hold 250 chickens. It works at its best in Spring weather. In very severe Winter weather it is often hard to keep the temperature up where it should be. High winds are apt to make trouble. The burners sometimes clog up from year to year. In warm Summer weather the house gets so hot that the chickens suffer. It is convenient in caring for the chickens altho the burner is so low that lighting is a nuisance. The cost is moderate and the fuel cost is reasonable. Within the last year or two several makes of coal stove colony brooders have appeared on the market. They are rather a simple contrivance and bid fair to become extremely popular. The three to five hundred size has been used a great deal and nearly everyone who has used them is loud in their praise. The fire does not keep as long as it might so that late night tending and early morning care are necessary. The larger sizes having capacity for up to 1500 have not been used so much and are yet somewhat in the experimental stage. If they turn out to be as efficient as they promise to be a saving will be secured both in building and brooding cost. For several years the progressive poultry raisers of the Petulume Valley district of California have been using with marked success a large colony brooder holding 1200 to 1500 chicks that is heated with crude oil. A brooder upon much this same style is being introduced in the East. Several such brooders are in use in Hammonton, N. J. The fuel cost with kerosene oil is relatively high altho if the brooders are filled to their full capacity it is not so much more than with some of the other kinds.

Brooders For Small Flocks

The demand for the small stationary lamp-heated brooders is very limited now. These used to be the only dependable kind for small flocks. In fact large plants were often equipped with numbers of them. Much the same style of hover was used in small outdoor colony houses and in long houses holding fifty or more. The adaptable hover as made by two or three enterprising firms superseded these to a considerable extent. These can be so easily transferred from one place to another that they have found a strong demand. When used in well protected places they are satisfactory but where the wick has to be turned high to keep up the heat there is danger from smoking. They should not be overcrowded. Most of them hold seventy-five better than over a hundred. The fireless craze has come to its end. For a person who wanted to raise a dozen or two chickens just for amusement it was an interesting way. Very good chickens can be raised where small flocks are kept and very careful attention is given them the first week or so.

How Shall We Decide

It largely resolves itself down to a few points. How many chickens do you intend to brood at one time? At what time of the year do you intend to begin? The first question will decide for you whether you want one of the mammoth systems or large colony brooders or whether you want one of the adaptable hovers. If over two hundred you will probably do best to choose one of the large colony methods. If you want to raise Winter broilers as a side line or a specialty perhaps the long pipe system would answer best for two thousand or more. For Spring brooding the colony houses will do just as effective work and will entail a much less expensive investment. A pretty good way is to have one or two of the large colony brooders and a couple of adaptable hovers. The hovers can be used in emergencies for small numbers where it would not be economical to run the larger ones.

To conclude, think well about the importance of having good brooding equipment. The old established firms can usually be depended upon to put out serviceable goods. The initial investment is not the thing that counts. Raising a large percentage of the chicks is what makes a method desirable. In building houses whether large or small make them tight. You can not afford to heat all outdoors. Think of the work you can save by arranging the interior rightly. Think of the ventilation which is so necessary for young stock. It is often better to copy after the plan of some experienced man who has made a success in the business than it is to make up some new arrangement of your own that has never been tried out.

MARCH BEE WORK

If the bee-keeper at this time has all the hives and supers prepared for the coming season as he should have, there is little that can be done that will make for success the coming season except reading and planning.

No business can be said to be well managed where there are small unnecessary leaks or wastes. The most common waste in bee-keeping is that of wax, which can be rendered from scraps of comb scraped from hives and frames and also rendered from combs no longer useful for breeding purposes. Great numbers of combs are now being used which contain so much drone comb as to cause the bee-keeper to lose in a year, thru the overproduction of drones, enough to replace all hives with frames with full sheets of foundation and thus insure nearly perfect combs. No hive should contain more than 30 square inches of drone comb unless it is a hive in which we are raising a choice strain of drones for mating purposes.

In cleaning hives and boxes the scrapings are often thrown away because they seem to be practically all propolis or bee glue, but there is a good percentage of recoverable wax in this refuse. Melt the whole thing in a vessel with plenty of water and allow to cool, when the propolis will be found at the bottom of the vessel and the wax on top.

Rendering wax, altho not very pleasant work, pays a good profit at this time, with good average wax selling at 34 cents wholesale. For best results a good press is a necessity, altho fair work can be done with an old cider or lard press provided there is an abundant supply of boiling water or steam. The old combs and refuse are thoroly melted but boiled little or not at all, as wax which has been much boiled is not soft and pliable but has a granular appearance. The press is heated by boiling water and the melted material is dipped together with about twice its volume of the hot water into a burlap bag in the press and the pressure applied, released, more boiling water is poured on the "cheese" and pressure is again applied. It is believed best results will be obtained by having a tight outside can to the press instead of the usual perforated one and pouring the wax and water from the top, so making it impossible for the "cheese" to reabsorb the wax. The secret of getting the maximum quantity of wax is in using an abundance of water and pressing in small quantities.

The use of acid in refining wax is unnecessary and often results in injury to the wax. If the wax is kept liquid for a long time the sediment will be practically all on the under side of the cake and can be scraped off when the cake will be ready for market. A fireless cooker or anything on that order is ideal for settling wax.

A common practice with bee-keepers, but a losing one, is trading beeswax at about 32 cents a pound for foundation at 55 cents to 60 cents a pound, a margin of at least 23 cents apound, when if shipped to a foundation factory to be made up a saving of at least 5 cents per pound is made after deducting transportation and making charges. This applies to quantities of 25 pounds or more but if one has only a small quantity two or more can club together and effect a considerable saving.

In bee-keeping as well as other business ventures it is the small things which count.—E. G. Carr, N. J. Deputy Bee Inspector.

TREATMENT FOR FROZEN COMBS

A very satisfactory plan for treating birds with frosted combs, devised by the Connecticut experiment station, is as follows:

"In case of frozen combs or wattles perhaps on of the best methods of procedure is to first get the frost out by smearing the affected part with vaseline and then manipulating with the fingers. Do not take the bird to a very warm room, and likewise protect the individual from severe cold. Then anoint the frozen parts once or twice a day with a mixture consisting of five tablespoons of vaseline, two tablespoons of glycerine and one tablespoonful of turpentine. A male bird whose comb and wattles have not been frosted too badly nor too often may later be used for breeding purposes with impunity."—D. T. H.

Which Tree Do You Want?

The slow-grower, with few and shallow roots and fruit of poor quality, or the vigorous, quick and steady producer of prime fruit?

DU PONT

Red Cross Dynamite

Blasted the hole in which the tree to the right was planted. The hole for the other tree was spade-dug. Both were two years old when photographed and excavated to show the root development.

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Tells why chicks die
J. C. Reefer, the poultry expert of 1605 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

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MAKA-SHEL FOR ME
Feed Grit—give the chicken something that grinds the grain in the crop and prepares food for proper assimilation. Oyster shells and bone are too soft and won't do what Maka Shel Grit will do. Maka Shel Grit will increase weight and egg-laying, by helping the chicken digest all she is fed. 200 lbs. for $1.00 f. o. b. cars. $10.00 per ton freight paid. Edge Hill Silica Rock Co., Box V, New Brunswick, N. J.

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The Original, First Offered, Leading Special 10 Day Food
Starts Chicks, Turkeys, Pheasants Healthy
5 lbs feeds 75 chicks first week. They thrive wonderfully on it. Send for special introductory offer & Poultry Supply Price List
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Single Comb W. Leghorns
Best laying strain, vigorous stock. Eggs for hatching, $1.00 per 15; $3.00 per 50; $5.00 per 100. If 50 percent hatch is not secured they will be REPLACED AT HALF PRICE. Let us book your orders early. J. M. & C. C. McCURDY, Hartstown, Penna.

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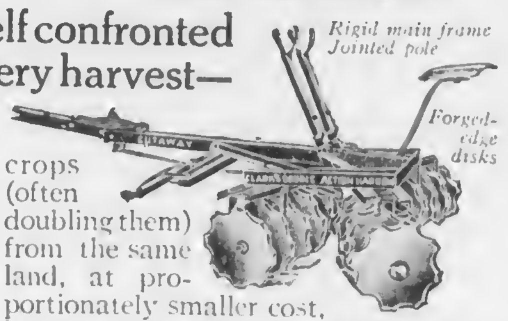

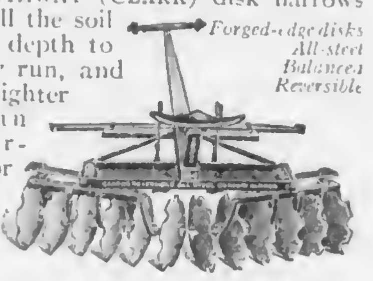

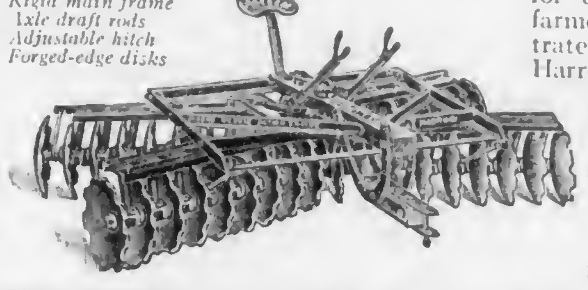

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Cutaway (CLARK)

advertisement about Jim, the farmer whose land produced double that of his neighbor's, simply because he took a look ahead to the harvest when making the first preparation for planting. He followed the advice Jim gave his 50%-farmer neighbor and that very day wrote to us for a copy of "*The Soil and Intensive Tillage.*" In it he read about the chemical and physical properties of the soil, about how plants feed, and about intensive tillage. He learned that he could make much larger crops (often doubling them) from the same land, at proportionately smaller cost, by using CUTAWAY (CLARK) disk harrows. He got an entirely new idea about disk harrows and disk harrowing.

Do you know how much you lose where there are little hard ridges between the surface and the subsoil in your fields? Often the surface looks mellow and fine, and you are deceived. Do you know how much you lose every year because there is a clumpy strata between the seed-bed and the subsoil? You can stop these losses. CUTAWAY (CLARK) disk harrows pulverize all the soil to the full depth to which they run, and they are lighter draft than other harrows, size for size. There is a style and size for every farmer. In our catalog you will find illustrated and described Double Action Engine Harrows; Double Actions for horse power for both orchard and field work; Corn and Cotton Harrows; one-horse harrows for field, grove and garden; Bush and Bog Plows; Right Lap Plows; California Orchard Plows—in fact, the tool *you* need. Remember, our catalog "*The Soil and Intensive Tillage,*" is free for the asking. Write for it today.

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Grange

McSPARRAN'S GRANGE NOTES

Free Canal Tolls

The question as to whether or not the coast trade vessels should be charged a toll in passing thru the Panama canal seems to be rather hard to decide. Congress at one time decided to grant them free toll and now is reconsidering the matter, or rather the attempt is being made to charge toll for these vessels the same as for others. This brings up again the subject of the government giving concessions to transportation companies.

It is a very doubtful proposition for the government to take the people's money and give it to a private corporation in order to get that corporation to do something for the benefit of the public at a future time. Large concessions of land and privileges were made to our transcontinental railroads to encourage their projection into the new West; and while these grants may have been the means of causing roads to be built where they otherwise would not have been built, yet when it came to the railroads making a return of these concessions to the people in the form of freight and passenger rates, they not only have been as grasping as other roads but are doing all they can to prevent their competitors, these coast-wise vessels from getting this much smaller concession from the government.

The general public which, as consumers, will pay these transportation charges, is concerned in the question in this way: Will the granting of this exemption from toll mean a lowering of the basis of rates for shipments both by water and land, or will it mean simply a gift from the government to certain of our vessels? We are rather inclined to think that unless some more effective method of controlling the pooling of rates is found than we have now that the latter will be found to be the true statement of the case. H. L. Pearsall, of Potter Co., Pa. in a letter to a Philadelphia daily hits the nail on the head when he says:

"And if these railroads, after receiving such large gifts from the government, still plunder the people with high freights and fares, why should we assume that vessels given free passage thru the canal will do any better? There is no reason to believe that free canal tolls will benefit any but the owners of the favored vessels.

"The transcontinental railroads are creatures of the government, passing for thousands of miles across the public domain, and if they are plundering the people it is because their creator, the government, permits them to do so. Our motto is, no more government aid to private monopoly in land grants, water, mineral or timber rights; no ship subsidy, no free canal. Govern the monopolies that now are and create no more."

The Grange of Pennsylvania has been strongly opposed to ship subsidy in any form and it looks to me as tho this were only subsidy in another form because there is no settled rate basis from which this exemption could be subtracted for the benefit of the people. Neither has there been any real physical valuation of these transportation properties by which a real basis of rates could be arrived at.

We do not pretend to have studied the technicalities of our treaties so that we can discuss the relation of our treaty with England to this subject, but it does seem strange that any treaty would be entered into by the officers of this great government so that when we spent $400,000,000 of our own money to dig a canal on our own land (for we bought the right of way) we should be compelled to ask Great Britain or any other country for the privilege of sending any or all of our own vessels thru that canal free of charge. If any such compact was made, the sooner it is broken, once and forever, the better. It is very proper to have friendly understandings with foreign nations. But these treaties should not only guarantee the right, but if necessary, compel each nation to tend to its own business.—John A. McSparran.

THREE MORE BATTLESHIPS

Few people realize the fact that 50 to 75 percent of the entire revenue of the United States is being expended for battle ships and preparations for war while peace prevails. What is going to bring this mad race of military expenditure to an end? One of the first factors will be the enormous cost. This problem is sure to be settled in the long run as an economic one. The nations of the earth cannot go on in this mad rush for naval expansion. The burden will become intolerable. No country can take up the sword without grave occasion, or it will have the condemnation of all the others. If any nation now unjustly attacks another it must be in the face of an opposition more potent than serried ranks of armed soldiers, or great squadrons of war ships. No nation is allowed to annex another country when it has gained a victory in war.

International Congresses have been held to prevent any nation from obtaining any great territorial accessions, and so it will be in the future. Nations are not allowed to acquire additional territory without the consent of the rest. There is concerted action among nations; a balance of power to be preserved so no acquisition shall be made by one without general approval. This doctrine was maintained when we had a weak navy, even when we had no navy; how much more will it be maintained in these days when every tendency is toward a community of interests among nations; when disturbance of the world's peace awakens universal disapprobation, and when the strong are not allowed to impose upon the weak, and war would hardly be tolerated between civilized nations.

A potent factor in doing away with the war monster is the increasing attention of civilized nations to the pursuit of industry and commerce. Those who are engaged in the industrial pursuits seek to prevent war just as a sanitary science guards against pestilence. With the growth of human intellect and the absorption of men in intellectual pursuits, and the increased influences of moral forces, war seems more and more appalling.

The familiar arguments of the modern war promoters is "prepare for war to preserve peace," and this great naval program is to show the world that we are going to protect our interests. Who is threatening our interests? In this great world where is there a sentiment in any nation that has one warlike note against the United States? The fundamental fallacy in all these arguments is the thought that in this day neither an individual nor a nation is safe unless he goes armed, while just the contrary is true.

The more we abstain from military armaments and everything that looks like aggression, the more our interests will be respected in the rest of the

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For all kinds of weather"

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Hub-Mark Bootees are made from pure Gum Rubber and A1 Duck, with leather insoles. They are reinforced at every point where the wear and the strain comes. They have no seams that can rip. Their soles and uppers cannot split nor crack.

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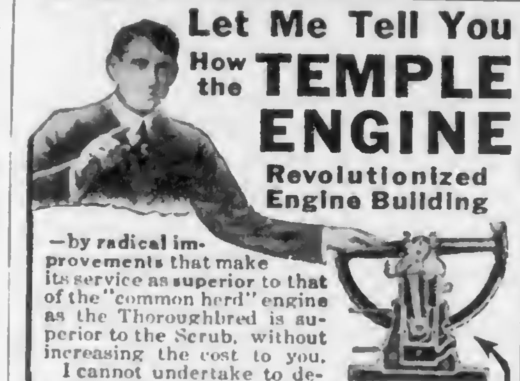

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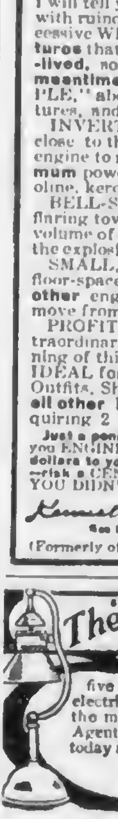

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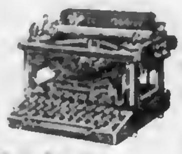

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MUTILATED TEXT

Cream Cheese.—The dried pieces of cheese may be grated and mixed with rich cream, and seasoned with salt and pepper or paprika and left to stand and ripen for a day. The result is an excellent cream cheese which may be served with salad. Some cream may be used.—Mrs. J. J. O'Connell.

Toughening Glass.—To render lamp chimneys and other glass tough so it will not crack, place your chimneys, tumblers or other glassware which you desire to keep from cracking in a pot filled with cold water, add a little cooking salt, allow the mixture to boil well over a fire, and then cool slowly. Glass treated in this way is said not to crack even if exposed to very sudden changes of temperature. The process is simply one of annealing and the slower the process, especially the cooling portion of it, the more effective will be the work.

Prune Pastry.—Two heaping tablespoonfuls of lard, two heaping tablespoonfuls of butter, half a pound of flour, one teaspoonful of baking powder, water to mix, one-fourth of a pound of prunes, four apples, one strip of lemon peel, and two tablespoonfuls of brown sugar. Soak the apples and prunes together and then stew them with the sugar and lemon rind. When quite soft, take the stones from the prunes and break up the apples. Make a paste with the lard, butter, flour, baking powder and water. Line a pudding dish with it, put the mixture inside and cover with another piece of pastry, bake in a hot oven for half an hour.

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6368—Ladies' Shirt Waist.—Cut in sizes 34 to 42 inches, bust measure. Size 36 requires 2¼ yards of 36-inch material, ⅞ yard of 27-inch goods for collar. Price of pattern, 10 cents.

5960—Ladies' Apron.—Cut in sizes 32, 36, 40 and 44 inches, bust measure. Size 36 bust requires 5 yards of inch material and ¾ yard of 27-inch contrasting goods. Price, 10 cents.

4500—Children's Rompers.—Cut in sizes 2 to 8 years. Age 4 years requires 2⅛ yards of 36-inch material. Price, 10 cents.

5972—Girls' Dress.—Cut in sizes to 12 years. Age 8 years requires yards of 44-inch material. Price, cents.

6309—Ladies' Two Gored Skirt.—Cut in sizes 22 to 30 inches, waist measure. Size 24 requires 2⅜ yards of 44 or inch material. Price, 10 cents.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 2, 1914.

Desirable grades of butter were well cleaned up at good values. Egg receipts were moderate and the market ruled firm under a fair demand that kept supplies of desirable stock under pretty good control. Poultry ruled firm with demand equal to the offerings. Fruits and vegetable offerings were moderate with prices well sustained.

Butter.—Western creamery, 34c; extras, 32@32½c; firsts to seconds 26@30c; special prints, 38@41c; near-by prints, 32c.

Eggs.—Candled, 34@37c doz; extras, 32c. Current receipts at $8.85 per standards case.

Poultry.—Fowls, 16@17c; old roosters, 12@13c; pigeons, 30@32c pair.

Dressed Poultry.—Western fowls, 12@20c; roosters, 15c; turkeys, 21@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 80c@$1 bu. Onions $3.50@3.65 per 100 lb bag. Peppers $1.75@2 per carrier. Eggplant $2.50@3.50 carrier. Lettuce $2@4 per hamper. Beets, new 5@8c bch. Sweet potatoes, 40@60c bas. String beans $2.00@4.00 hamper. Squash $2@2.50 per crate. Cucumbers, Florida $5@6 hamper. Celery, 60@75c per doz. stalks. Cabbage, new $1.75@2 ½-bbl crate. Cauliflower, $1.25@1.75 hamper.

Fruit.—Apples $4.00@6 bbl. Pineapples, per crate, $2@3.50. Pears, 50@75c basket. Grapes $4@7 keg; cranberries, $3.00@3.50 crt; lemons, $2@3.50 per box; grape fruit $2@4 per box; oranges, $2@3 per box.

Hay and Grain.—No. 3 hay, large bales, $18.00@18.50; No. 1 medium $18@18.50; no grade, $10.00@12.00. Clover mixed hay, light mixed at $17.50@18.00; straw No. 1 new straight rye, $16.50; No. 2 do., $15@15.50; No. 1 tangled rye straw new $12; No. 2 do., $11.00@11.50; No. 1 wheat straw, $10@10.50; No. 1 oat straw, $10.50@11; new shelled corn No. 2 yellow, 69½@70½c. Wheat No. 2 red, $1@1.00½; No. 1 Northern, $1.05@1.06; No. 2 white oats, 45@45½c; No. 3, white 46@46½c; Standard white 45½@46c.

Coffee.—Rio 7s 9⅛c; Santos 4s 11⅞c. Mild Coffee.—Cordova, 13@16½c.

Sugar.—Cut loaf, $5.10 cwt.; cubes, $4.35; powdered, $4.20; granulated, $4.10; standard granulated, $4.15; crystal A, $4.10.

Flour.—For 196 lbs. in wood, winter-clear, $3.85@4.10; do straight, $4.20@4.35; favorite brands, $5.00@5.25; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17¾c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos. 5 to 12 and up, $1.55@2.75; do. green 15c.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅜@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13¼@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs, 11¾@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions, 20c ½-pk. Peppers, 35c doz. Eggplants, 15@25c apiece. Cabbage, 10c a head. Lettuce 2 to 3 hds for 25c. Beets new 10@15c bch. Swt potatoes 30 ½-pk. White potatoes, 20c ½-pk. String beans, 75c per bas. Tomatoes, hothouse, 85c small bas; cucumbers 10@15c apc. Celery 60c bch; squash 5 to 6 for 25c; cauliflower 20@35c apiece; mushrooms, 40@50c lb.

Fruit.—Grapes 30c lb. Apples 20c ¼-pk. Pineapples, 20@35c apiece. Cranberries, 20c qt; lemons 15@20c doz; grapefruit, 2 to 3 for 25c; Oranges, 35@75c doz.

YORK PRODUCE MARKET

York, Pa., March 2, 1914.

The extremely cold weather and the closed roads many places made the market conditions very uncertain. Some days there were but few farmers in town and other days the customers failed to turn out, hence prices were up and down. The principal feature is the sudden demand for potatoes. These have been very slow during the winter until the past two weeks. Prices range from 60 cents for small to $1.10 per bu. Butter and eggs firm.

Eggs.—26@29c.

Butter.—Country, 30@35c; separator, 35@38c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Scarce. Hens 15@17c. Dressed poultry, 50@95c each.

Vegetables.—Potatoes 10@16c ½-pk; 60@$1.10 bu; cabbage 4@12c each; lettuce, 5@12c; beets, 3@5c bch; radishes, 5c bch; onions 5c bch., 10@16c per ½-pk; lima beans 14@16c qt; sweet potatoes, 12@15c per ½-pk; lard 14@16c lb; celery, 8@15c; peppers, 8@12c doz; turnips 10@12c per ½ pk, soup beans, 12c qt; sauer kraut, 8@10c qt, apple butter, 20@25c qt.

Fruit.—Apples, 15@35c ½-pk; pears, 10@25c per ½-pk; chestnuts, 10@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.07 bu; corn, 82c; oats, 55c; rye, 77c; bran, $1.40 cwt.; middlings $1.50 cwt.

Wholesale Grain Market.—Wheat, 97c; corn, 69c; oats, 45c; rye, 67c.

NEW YORK PRODUCE

New York City, March 2, 1914.

Stormy weather has made the butter market rather irregular. Owing to the uncertainty as to supplies, values were little changed. The egg market labored under the same irregularity as the butter market. Little demand in poultry. Market nominal. In the fruit and vegetable markets values were unsettled.

Eggs.—State and near-by hennery whites, fine to fancy 33c; gathered whites, 32½@33c; fair to good 31½@32c; no grades, 30@31c; fresh gathered firsts to extras, 31½@32½c; seconds to thirds, 26@30½c; no grades 26@28c; mixed 30½@31½c.

Butter.—Creamery, firsts to extras, 28@32c; thirds to seconds, 22@27c; state dairy 20@31c; packing stock 16@19½c; process 20@23c.

Cheese.—Whole milk specials, 18@18½c; do, common to fancy, 14½@17¾c; skims 6@14¼c.

Dressed Poultry.—Turkeys, dry, 23@25c; chickens, 11@25c; fowls, 12@18c; old roosters, 14c; ducks 13@19c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage, $20.00@28.00 ton. Green beans $3.50@4 bas. Carrots $1.25@2.25 bag. Cucumbers, $1@$2 doz. Lettuce $1.25@4.50 bas. Squash, $2.25@3 bbl. Celery, $1.50@5.00 per basket. Onions $3.00@3.50 100-lb bag. Tomatoes, $1.00@$3.00 carrier. Peppers $1.25@1.50 carrier. Beets, $3@4 per 100 bunches. Potatoes, $4.00@6.00 bbl. Sweet potatoes, 35c@$1 bas. Eggplants, $2@2.75 per bx. Cauliflower $1.25@1.75 bas.

Fruit.—Apples, $2.00@6.00 bbl. Cranberries $9@13.50 bbl. Pears 75c@$1.50 bbl.

Grain.—Wheat No. 2 red $1.01¼c; No. 1 Northern, $1.05½; corn, new No. 3 yellow 70⅞c; oats, standard white 45½@46c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 2, 1914.

Lenten conditions produced a dull feeling thruout the market, while prices were well maintained. Ohio and Illinois cattle were on sale. Calves and cows realized former values.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,009	9,885	5,900
Previous week	2,828	10,636	5,457

Best steers	$8.90@9.00
Choice steers	8.60@8.80
Good	8.40@8.50
Medium steers	8.00@8.25
Common steers	7.50@8.00
Bulls	5.25@6.85
Fat cows	6.20@7.00
Medium cows	4.75@5.75
Thin cows	3.00@4.50

Veal calves steady

Best calves	$11.50@12.25
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do.	5.00@8.00

Sheep and Lambs.—Values showed no material change.

Choice wethers	$6.00@6.25
Good do.	5.25@6.00
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.50@8.75
Good to choice do	8.25@8.50
Common to medium	6.50@8.00

Hogs.—The market was a trifle quiet but steady at the ruling rates. Western as to size and quality $12.50@12.75.

City Dressed Stock.—All choice and prime meats of every variety were steadily held, demand being moderate. Steers, 12@14c, heifers, 10½@13c; cows, 9@11c. Veal calves, 14@15c, country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 2, 1914.

Cattle.—With a supply of 85 loads compared with 125 loads the week before, the market ruled slow at steady to strong prices on the choice heavy and light grades while the medium grades were about steady. Heifers, fat cows and bulls were in light supply and with a good demand they sold higher. Fresh cows barely steady on the choice, while other grades and springers were slow sale at low prices. Today's cattle receipts were 115 head, and the market was steady on best but slow on others.

Good to choice	$8.80@9.10
Good 1,300-1,400 lb.	8.40@8.75
Medium to good 1,200-1,300 lb	8.10@8.35
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb	7.40@7.75
Rough, half fat, 1,000-1,300	5.00@7.00
Common to good fat oxen	4.00@6.50
Common, 700-900 lb.	5.50@6.50
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.00@6.50
Heifers	5.50@8.00
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves.—Veal calves have been in light supply all week and with good demand market closed 50c per cwt higher than last Monday's prices. Today's receipts were 300 head and the market ruled steady.

Heavy and thin calves	$5.50@7.50
Veal calves	8.50@12.50

Sheep and Lambs.—The supply of sheep and lambs during the week has been fair but with a good demand the market ruled active with a gain of 10 to 15 cents per cwt on choice grades of both sheep and lambs. Other grades steady. Today's receipts were 25 double-deck loads, bulk of the supply being lambs. With a light demand the market ruled slow and steady on sheep, but lower on lambs.

Prime wethers	$6.25@6.50
Good mixed	5.90@6.15
Fair mixed ewes and wethers	5.25@5.75
Culls to common	3.50@4.50
Spring lambs	5.50@8.00

Hogs.—The supply of hogs during the week was light and with a good demand the market ruled active and 5 to 10 cents per cwt. over Monday's prices, but the close for the week was bad, all the gain lost, and 10c per cwt. besides. Today's hog receipts were 50 double deck loads, and the market ruled steady.

Prime heavy	$9.05@
Prime medium weight	9.15@
Heavy mixed	9.10@
Best heavy Yorkers	9.15@
Light Yorkers	9.15@
Pigs	8.75@9.00
Common to good roughs	7.90@8.50
Stags	7.00@7.50

BUFFALO LIVE STOCK

Buffalo, N. Y., March 2, 1914.

Cattle.—The slow opening for the week and the approach of the Lenten season made a quiet trade of the week. On the close the market was only fair at unchanged prices. With a run of 3,750 head in the yards this morning, cattle continued slow.

Choice heavy steers	$8.75@9.00
Medium	8.25@8.75
Yearlings	8.00@8.50
Handy butchers	7.50@8.35
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.50@8.00
Butcher bulls	6.00@7.50
Feeders	6.25@7.00
Stockers	5.00@6.25
Cows and springers	30.00@90.00

Calves.—The trade for the week was fair for choice veals. The opening basis was $12@13. On the close the market was active and the basis half a dollar lower.

Choice veals	$11.50@12.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The market was easier thruout the week. Lambs sold easier. The trade in sheep was fair. Wethers were in good demand. On the close the market was active for lambs and 10 to 15c higher. The best lambs sold $8.25@8.50. Yearlings and sheep were in good demand and firm. Sheep and lamb receipts today totaled 18,000. The market was lower.

Choice lambs	$8.10@8.15
Yearlings	7.00@7.50
Wethers	6.00@6.25
Ewes	5.50@5.75
Sheep	5.75@6.00

Hogs.—The opening basis was lower and the demand fair. Medium and heavy were in good demand. On the close the market was steady and light weights easier. Heavy hogs sold generally at $9.25, and a few at $9.50. Some 14,000 hogs were on sale on a lower market today.

Heavies	$9.00@9.10
Mixed and medium	9.00@9.10
Yorkers	9.00@9.10
Light Yorkers	9.00@9.10
Pigs	9.00@9.10
Roughs	8.00@8.40
Stags	6.50@7.50

Horses.—With 450 head on sale, there was a fair demand for best teams at $650@700 while single workers brought $225@300.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., March 2, 1914.

Hay.—Receipts of the lower grades, this applying to No. 2 timothy as well as other grades, of which there is quite an abundance arriving, and the prices on same are slowly but surely working lower. Poorer than No. 2 hay shows an accumulation at the different terminals with no buyers; sales being effected only at concessions. Demand for strictly No. 1 timothy and No. 1 clover is good and being readily placed at quotations.

No. 1 timothy	$16.25@16.50
No. 2 timothy	14.00@15.00
No. 3 timothy	10.00@11.00
No. 1 light mixed	14.50@15.00
No. 1 clover mixed	13.75@14.25
No. 2 clover mixed	10.50@11.50
No. 1 clover	13.50@14.00
No. 2 clover	10.00@11.50

Ear Corn.—Receipts and demand about equal. Market steady and looking stronger.

New No. 2 yellow	69@69½c.
New No. 3 yellow	65½@67c.

Shell Corn.—Market continues exceptionally draggy for this season of the year.

New No. 2 yellow	70@70½c.
New yellow No. 3, natural	66@66½c.
New sample	64@65c.

Oats.—Market dull and draggy with little demand. Some inquiry for oats suitable for seeding purposes.

No. 2 white	43½@43¾c.
Standard oats	42¾@43c.
Standard No. 3 oats	41¾@42¼c.

Mill Feed.—Oat market bare of bran, with quite a good inquiry for same. Demand for middlings fair.

No. 2 white midds.	$27.00@27.50
No. 1 brown midds	26.00@26.50
W. W. Bran, coarse.	27.00@27.50
W. W. Bran, medium	26.00@26.50

NEW YORK MILK MARKET

New York City, March 2, 1914.

The milk market is over supplied. The market value is believed to lie between 3⅜@3⅝ cents a quart net for grade B to the producer in the 32-cent zone. The surplus was augmented by the failure of the railroads to get the milk into the city on Monday morning early enough for general delivery. The storm delayed all trains very badly. The dealers said the situation was worse than at any time since the famous blizzard of 1888. The Health Department on Saturday definitely ordered that those dealers who had failed to install pasteurizing machinery before March 1, should be prosecuted.

The receipts of milk and cream in 40-quart cans for the week ending February 28 were as follows:

Railroad	Milk	Cream
Erie	46,234	1,562
Susquehanna	9,849	481
West Shore	15,114	702
Lackawanna	52,750	1,325
N. Y. Central (long haul)	78,587	1,347
N. Y. Central (short haul)	11,835	88
Ontario	40,185	2,450
Lehigh Valley	36,249	731
Homer Ramsdell Line	.....	....
New Haven	7,770	140
Pennsylvania	3,250	450
Other sources	1,665	16
Totals	303,488	9,292

ELGIN BUTTER QUOTATION

Elgin, Ill., March 2, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 30c.

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All parts of the Provinces of Manitoba, Saskatchewan and Alberta, have produced wonderful yields of Wheat, Oats, Barley and Flax. Wheat graded from Contract to No. 1 Hard, weighed heavy and yielded from 20 to 45 bushels per acre; 22 bushels was about the total average. Mixed Farming may be considered fully as profitable an industry as grain raising. The excellent grasses full of nutrition, are the only food required either for beef or dairy purposes. In 1912 at Chicago, Western Canada carried off the Championship for beef steer. Good schools, markets convenient, climate excellent. For the homesteader, the man who wishes to farm extensively, or the investor, Canada offers the biggest opportunity of any place on the continent.

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You can prove it by 30 DAYS' TRIAL

The "EASY" utilizes air to force suds through the cloth. That means air and suds without friction, that's why it saves energy and fabric. Just remember it, "easy for the operator, harmless to the fabric;" yet forceful and efficient.

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXIII (continued)

“Of course!” said the Sergeant gravely, tho he felt a little thrill of content as he saw the shot he had been by no means sure of, had told. “That man, however, had lost his horse in the river, and it was the one he got from you that took him out of the country. Now if we could show you knew what he had done, it might go as far as hanging somebody.”

The man was evidently not a confirmed law breaker, but merely one of the small farmers who were willing to pick up a few dollars by assisting the whisky-runners now and then, and he abandoned all resistance.

“Sergeant,” he said, “it was 'most a week before I knew, and if anybody had told me at the time, I'd have turned him out to freeze before I'd have let him have a horse of mine.”

“That wouldn't go very far if we brought the charge against you,” said Stimson grimly. “If you'd sent us word when you did know, we'd have had him.”

“Well,” said the man, “he was across the frontier by that time, and I don't know that most folks would have done it, if they'd had the warning the boys sent me.”

Stimson appeared to consider for almost a minute, and then gravely rapped his companion's arm.

“It seems to me that the sooner you and I have an understanding, the better it will be for you,” he said.

They were some time arriving at it, and the Sergeant's superiors might not have been pleased with all he promised during the discussion. Still, he was flying at higher game, and had to sacrifice a little, while he knew his man.

“We'll fix it up without you, as far as we can, but if we want you to give evidence that the man who lost his horse in the river was not farmer Winston, we'll know where to find you,” he said. “You'll have to take your chance of being tried with him if we find you're trying to get out of the country.”

It was half an hour later when the rest of the troopers arrived and Stimson had some talk with their officer aside.

“A little out of the usual course, isn't it?” said the latter. “I don't know that I'd have countenanced it, so to speak, off my own bat at all, but I had a tolerably plain hint that you were to use your own discretion over this affair. After all, one has to stretch a point or two occasionally.”

“Yes, sir,” said Stimson. “A good many now and then.”

The officer smiled a little and went back to the rest. “Two of you will ride after the other rascal,” he said. “Now, look here, my man, the first time my troopers, who'll call round quite frequently, don't find you about your homestead, you'll land yourself in a tolerably serious difficulty. In the meanwhile, I'm sorry we can't bring a charge of whisky-running against you, but another time be careful who you hire your wagon to.”

Then there was a rapid drumming of hoofs as two troopers went off at a gallop, while when the rest turned back towards the outpost Stimson rode with them quietly content.

CHAPTER XXIV

The Revelation

Winston's harvesting prospered as his sowing had done, for by day the bright sunshine shone down on standing wheat and lengthening rows of sheaves. It was in the bracing cold of sunrise the work began, and the first pale stars were out before the tired men and jaded horses dragged themselves home again. Not infrequently it happened that the men wore out the teams and machines, but there was no stoppage then, for fresh horses were led out from the corral or a new binder was ready. Every minute was worth a dollar, and Winston, who had apparently foreseen and provided for everything, wasted none.

Then, for wheat is seldom stacked in that country, as the days grew shorter and the evenings cool, the smoke of the big thrasher streaked the harvest field, and the wagons went jolting between humming separator and granary, until the latter was gorged to repletion and the wheat was stored within a willow framing beneath the chaff and straw that streamed from the chute of the great machine. Winston had around him the best men that dollars could hire, and toiled tirelessly with the grimy host in the whirling dust of the thrasher and amid the sheaves, wherever another pair of hands, or the quick decision that would save an hour's delay, was needed most.

As compared with the practice of insular Britain, there were not half enough of them, but wages are high in that country, and the crew of the thrasher paid by the bushel, while the rest had long worked for their own hand on the levels of Manitoba and in the bush of Ontario, and knew that the sooner their toil was over the sooner they would go home again with well-lined pockets. So, generously fed, splendid human muscle kept pace with clinking steel under a stress that is seldom borne outside the sun-bleached prairie at harvest time, and Winston forgot everything save the constant need for the utmost effort of body and brain. It was even of little import to him that prices moved steadily upward as he toiled.

At last it was finished, and only knee-high stubble covered his land and that of Maud Barrington, while, for he was one who could venture fearlessly and still know when he had risked enough, soon after it was thrashed out the wheat was sold. The harvesters went home with enough to maintain them thru the winter, and Winston, who spent two days counting his gain, wrote asking Graham to send him an accountant from Winnipeg. With him he spent a couple more days, and then, with an effort he was never to forget, prepared himself for the reckoning. It was time to fling off the mask before the eyes of all who had trusted him.

He had thought it over carefully, and his first decision had been to make the revelation to Colonel Barrington alone. That, however, would, he felt, be too simple, and his pride rebelled against anything that would stamp him as one who dare not face the men he had deceived. One by one they had tacitly offered him their friendship and then their esteem, until he knew that he was virtually leader at Silverdale, and it seemed fitting that he should admit the wrong he had done them, and bear the obloquy, before them all. For a while the thought of Maud Barrington restrained him, and then he brushed that aside. He had fancied with masculine blindness that what he felt for her had been well concealed, and that her attitude to him could be no more than kindly sympathy with one who was endeavoring to atone for a discreditable past. Her anger and astonishment would be hard to bear, but once more his pride prompted him, and he decided that she should at least see he had the courage to face the results of his wrong-doing. As it happened, he was given an opportunity when he was invited to the harvest celebration that was held each year at Silverdale.

It was a still, cool evening when every man of the community, and most of the women, gathered in the big dining-room of the Grange. The windows were shut now, for the chill of the early frost was on the prairie, and the great lamps burned steadily above the long tables. Cut glass, dainty china and silver gleamed beneath them amidst the ears of wheat that stood in clusters for sole and appropriate ornamentation. They merited the place of honor, for wheat had brought prosperity to every man at Silverdale who had had the faith to sow that year.

On either hand were rows of smiling faces, the men's burned and bronzed, the women's kissed into faintly warmer color by the sun, and white shoulders shone amidst the somberly covered ones, while here and there a diamond gleamed on a snowy neck. Barrington sat at the head of the longest table, with his niece and sister Dane and his oldest followers about him, and Winston at its foot, dressed very simply after the usual fashion of the prairie farmers. There were few in the company who had not noticed this, tho they did not as yet understand its purport.

Nothing happened during dinner, but Maud Barrington noticed that, altho some of his younger neighbors rallied him, Winston was grimly quiet. When it was over, Barrington rose, and the men who knew the care he had borne that year never paid him more willing homage than they did when he stood smiling down on them. As usual he was immaculate in dress, erect, and quietly commanding, but in spite of its smile his face seemed worn and there were thickening wrinkles which told of anxiety, about his eyes.

“Another year has gone, and we have met again to celebrate with gratefulness the fulfillment of the promise made when the world was young,” he said. “We do well to be thankful, but I think humility becomes us too. While we doubted the sun and the rain have been with us for a sign that, tho men grow faint-hearted and spare their toil, seed-time and harvest shall not fail.”

It was the first time Colonel Barrington had spoken in quite that strain, and when he paused a moment there was a curious stillness, for those who heard him noticed an unusual tremor in his voice. There was also a gravity that was not far removed from sadness in his face when he went on again, but the intentness of his retainers would have been greater had they known that two separate detachments of police troopers were then riding toward Silverdale.

“The year has brought its changes, and set its mark deeply on some of us,” he said. “We cannot recall it, or retrieve our blunders, but we can hope they will be forgiven us and endeavor to avoid them again. This is not the fashion in which I had meant to speak to you tonight, but after the bounty showered upon us I feel my responsibility. The law is unchangeable. The man who would have bread to eat or sell must toil for it, and I, in disregard of it, bade you hold your hand. Well, we have had our lesson, and we will be wiser another time, but I have felt that my usefulness as your leader is slipping away from me. This year has shown me that I am getting an old man.”

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Dane kicked the foot of a lad beside him, and glanced at the piano as he he stood up.

"Sir," he said simply, "altho we have differed about trifles and may do so again, we don't want a better one—and if we did we couldn't find him."

A chord from the piano rang thru the approving murmurs, and the company rose to their feet before the lad had beaten out the first bar of the jingling rhythm. Then the voices took it up, and the great hall shook to the rafters with the last "Nobody can deny."

Trite as it was, Barrington saw the darker flush in the bronzed faces, and there was a shade of warmer color in his own as he went on again.

"The things one feels the most are those one can least express, and I will not try to tell you how I value your confidence," he said. "Still, the fact remains that sooner or later I must let the reins fall into younger hands, and there is a man here who will, I fancy lead you farther than you would ever go with me. Times change, and he can teach you how those who would do the most for the Dominion need live today. He is also, and I am glad of it, one of us, for traditions do not wholly lose their force and we know that blood will tell. That this year has not ended in disaster irretrievable is due to our latest comrade, Lance Courthorne."

This time there were no musical honors or need of them, for a shout went up that called forth an answering rattle from the cedar paneling. It was flung back from table to table up and down the great room, and when the men sat down, flushed and breathless, their eyes still shining, the one they admitted had saved Silverdale rose up quietly at the foot of the table. The hand he laid on the snowy cloth shook a little, and the bronze that generally suffused it was less noticeable in his face. All who saw it felt that something unusual was coming, and Maud Barrington leaned forward a trifle, with a curious throbbing of her heart.

"Comrades! It is, I think, the last time you will hear the term from me," he said. "I am glad that we have made and won a good fight at Silverdale, because it may soften your warranted resentment when you think of me."

Every eye was turned upon him, and an expression of bewilderment crept into the faces, while a lad who sat next to him touched his arm reassuringly.

"You'll feel your feet in a moment, but that's a curious fashion of putting it," he said.

Winston turned to Barrington, and stood silent a moment. He saw Maud Barrington's face showing strained and intent, but less bewildered than the others, and that of her aunt, which seemed curiously impassive, and a little thrill ran thru him. It passed, and once more he saw only the leader of Silverdale.

"Sir," he said, "I did you a wrong when I came here, and with your convictions you would never tolerate me as your successor."

There was a rustle of fabric as some of the women moved, and a murmur of uncontrollable astonishment, while those who noticed it, remembered Barrington's gasp. It expressed absolute bewilderment, but in another moment he smiled.

"Sit down Lance," he said. "You need make no speeches. We expect better things from you."

Winston stood very still. "It was the simple truth I told you, sir," he said. "Don't make it too hard for me."

Just then there was a disturbance at the rear of the room, and a man, who shook off the grasp of one that followed him, came in. He moved forward with uneven steps, and then, resting his hand on a chair back faced about and looked at Winston. The dust was thick upon his clothes, but it was his face that seized and held attention. It was horribly pallid, save for the flush that showed in either cheek, and his half-closed eyes were dazed.

"I heard them cheering," he said. "Couldn't find you at your homestead. You should have sent the five hundred dollars. They would have saved you this."

The defective utterance would alone have attracted attention, and, with the man's attitude, was very significant, but it was equally evident to most of those who watched him that he was also struggling with some infirmity. Western hospitality has, however, no limit, and one of the younger men drew out a chair.

"Hadn't you beetter sit down, and if you want anything to eat we'll get it for you," he said. "Then you can tell us what your errand is."

The man made a gesture of negation, and pointed to Winston.

"I came to find a friend of mine. They told me at his homestead that he was here," he said.

There was an impressive silence, until Colonel Barrington glanced at Winston, who still stood quietly impassive at the foot of the table.

"You know our visitor?" he said. "The Grange is large enough to give a stranger shelter."

The man laughed. "Of course he does; it's my place he's living in."

Barrington turned again to Winston, and his face seemed to have grown a trifle stern.

"Who is this man?" he said.

Winston looked steadily in front of him vacantly noticing the rows of faces turned towards him under the big lamps. "If he had waited a few minutes longer, you would have known," he said. "He is Lance Courthorne."

This time the murmurs implied incredulity, but the man who stood swaying a little with his hand on the chair, and a smile in his half-closed eyes, made an ironical inclination.

"It's evident you don't believe it or wish to. Still, it's true," he said.

One of the men nearest him rose and quietly thrust him into the chair.

"Sit down in the meanwhile," he said dryly. "By and by, Colonel Barrington will talk to you."

Barrington thanked him with a gesture, and glanced at the rest. "One would have preferred to carry out this inquiry more privately," he said, very slowly, but with hoarse distinctness. "Still, you have already heard so much."

Dane nodded. "I fancy you are right, sir. Because we have known and respected the man who has, at least, done a good deal for us, it would be better that we should hear the rest."

Barrington made a little gesture of agreement, and once more fixed his eyes on Winston. "Then will you tell us who you are?"

"A struggling prairie farmer," said Winston quietly. "The son of an English country doctor who died in penury, and one who from your point of view could never have been entitled to more than courteous toleration from any of you."

He stopped, but, for the astonishment was passing, there was negation in the murmurs which followed, while somebody said, "Go on!"

Dane stood up. "I fancy our comrade is mistaken," he said. "Whatever he may have been, we recognize our debt to him. Still, I think he owes us a more complete explanation."

(To be continued.)

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We also build Alfalfa Grinders, Hand Grinders, Stover Feedmills, Pump Jacks, Ensilage Cutters. Free catalogs

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$3 Package CURES any case or money refunded.
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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. When reply by mail is requested, it becomes private practice and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Dislocation of Patella.—I have a 7-year-old horse whose stifle joint slips out of place. When it is out he is unable to step, but drags toe until it slips into position. G. E. H., Moorestown, N. J.—Clip hair off stifle joint and apply 1 part powdered cantharides and 6 parts lard every week or 10 days.

Kidney Ailment.—I have a 10-year-old horse that must have kidney trouble. His water is very thick; his back is tender when pressed and he stands as if uncomfortable. He moves about in stall, changing feet and after being down a few hours is very stiff in hind parts. He is lead for exercise daily. I caught some of his urine, let it stand for three days and there was quite a sediment. A. B. G., Southhold, L. I., New York.—Give your horse 1 oz bicarbonate soda, 1 oz powdered charcoal, a dessert spoonful of salt and a teaspoonful of powdered nitrate of potash at a dose in feed, 2 or 3 times a day. He should be fed some roots.

Knuckling—Cracked Heels.—I have a pedigreed mare that is getting straight on fore fetlock joints. I would like to know what can be done for her. I have another horse that has scratches. F. E. W., Emilie, Pa.—Clip hair off and blister fetlock joints with 1 part cantharides and 8 parts lard every 10 days. Kindly understand that her pastern may be short and upright; if so hard work or fast driving will have a tendency to cause her to knuckle forward. She should be shod level. Dissolve ¼ lb. sugar of lead, 3 oz of sulphate of zinc, 3 oz of carbolic acid in a gallon of water and apply to sore heels, 2 or 3 times a day.

Wire Cut—Scar Tissue.—I have a young mare that cut her shin to bone on wire; this wound is situated midway between knee and ankle and the flesh seemed to be torn loose from bone at time of accident. The wound covered over and left a raw bunch in center about the size of a silver half-dollar, which refuses to heal. She is not lame, but I would like to have a cure. R. H., Salisbury, Md.—Apply tincture of iron to raw fungus once a day and as you perhaps know it is very difficult to reduce a bunch of this kind without making leg sore. You will obtain fairly good results by occasionally applying tincture of iodine, however, you must avoid blistering bunch.

Infected Udder.—I have a cow that commenced to milk hard and in a short time I found it almost impossible to draw milk from one quarter. I used a sharp instrument to open end of teat, but in a week this quarter swelled, became hard; then stringy milk and matter came out. Sometime ago two of the other quarters inflamed and are now in bad condition. What caused this trouble? What must I do to effect a cure? F. I. L., Genesee, Pa.—Three quarters of her udder are now infected. It is doubtful if these can ever be restored to their original condition. If you will apply 1 part iodine and 20 parts fresh lard to the diseased portions of bag every day or two, you will make her some better. Also give her 2 dr of potassium iodide at a dose in feed, 3 times a day. When you opened teat the instrument may have been infected, or it is possible that infection passed thru teat canal into quarter and then later, while milking her, infection was carried by hand from one quarter to the other two. Dairymen are frequently careless in this particular. I am inclined to believe that she will prove unprofitable for dairy purposes.

Rheumatism.—About a month ago two 5-months-old pigs commenced to cripple. First one became stiff and in four or five days another one moved sore. The whole trouble appears to be in their legs and it must hurt them to walk. They seldom get up without assistance. G. E., Laceyville, Pa.—Change their feed from corn to oats and oil meal, giving them some tankage or roots; besides, keep them dry and warm. Brush them twice a day, and give each one 10 grains sodium salicylate at a dose, 4 times a day.

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RIDER AGENTS everywhere are making big money exhibiting and selling our bicycles. **We Sell** cheaper than any other factory. **TIRES, Coaster-Brake rear wheels,** lamps, repairs and all sundries at *half usual prices.* **Do Not Wait;** write *today* for our *special offer.*

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Our book, "Better Farming," will be helpful to every land owner. Shows how to improve soil, raise bigger crops, blast stumps and boulders, and do all kinds of work with Atlas Farm Powder. Worth money to any farmer. Fill out coupon and get it FREE.

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BANG!!

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WIRE & FENCING PRICES **ROOFING PRICES**

LUMBER PRICES **BUILDING MATERIAL PRICES**

Here is the Greatest Sale ever advertised—the opportunity you have long sought for—a chance to buy staple lumber and building material—Roofing, Wire, Fencing, Furniture and Household Goods of every kind and description, in fact, Merchandise of every nature, at unheard of low prices.

We are determined that the Spring of 1914, will be the most successful in the history of this Great Company, and the Wise man will take early advantage of the great bargains shown in this advertisement.

You can order a complete carload of building material from us, including everything you need to construct and equip and we will ship it to you, without one cent cash in advance.

All we want to know is that the money will be paid us as soon as the material is received, unloaded and checked up.

Lumber Prices S-m-a-s-h-e-d

Yes, we mean smashed. Absolutely busted to pieces. That's our policy. We quote prices on lumber that will positively save you big money. If you will send your lumber bill we will send you a freight paid price that will mean a saving to you of from 30% to 50%. Every stick is absolutely first class, brand new and fully up-to-grade such as you would buy from any reputable house in the United States.

We have determined that the year of 1914 is going to be the Banner year in our great lumber department. We have on hand 20,000,000 feet of high-grade lumber suitable for the construction of Buildings, no matter for what purpose intended. Come to our great yards in Chicago and let us show you this stuff actually in stock. No other concern in the world has a more complete stock of everything needed to build, whether Lumber, Shingles, Structural Iron, Plumbing, Heating, Doors or anything else that you may need. Do you know that lumber is getting scarcer and scarcer every year? Yet our prices are lowest and will continue so until our stock is gone. WRITE TODAY.

This Door at 98c

Lot CD-39. Four panel painted door, size 2 ft. 6 in. x 6 ft. 6 in. 500 in stock. A high quality door for the price. This is only one of our many special bargains. Our grand Building Material Catalog and Bargain Sheets will show a full line of Inside Millwork of all kinds.

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We have a special lot of 1,000,000 5 to 2 10 inch Clear Shingles on which we are making an exceptionally low price of $2.80. Order by Lot No. MS-40.

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Galvanized Steel Roofing Is Fire, Water and Lightning Proof

We bought 20,000 squares of this Corrugated Iron Roofing, which we offer at this remarkably low price. It is new, perfect, and first-class, but light weight. The sheets are 22 x 24 in. x 1¼ in. corrugated. Our price of $1.25 per sq. is f. o. b. cars Chicago.

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Write us today for our special FREIGHT PREPAID PRICES on new, galvanized roofing. We are offering prices lower than ever before offered in the roofing business. Galvanized roofing at $2.75 per square and up. Ask for free samples. We can furnish anything needed in Roofing, Siding or Ceiling.

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Here again we show the lowest price ever known for roofing of quality. This smooth surfaced roofing we are offering is our one-ply "Ajax" brand, and the price includes necessary cement and caps to lay it; this price is f. o. b. Chicago; at 85c per square, we pay the freight in full to any point East of Kansas and Nebraska and North of the Ohio River, provided your order is for at least 3 squares. Prices to other points on application.

Roofing is guaranteed to wear as long and give as good service as any Ready Rubber Surfaced Roofing on the market. It is put up in rolls of 108 square feet and contains 3 to 4 pieces to the roll. We have other grades of Ready Roofing, which we offer at prices easily 30 per cent below regular quotations. Write today for free samples and Roofing Catalog. Fill in the coupon.

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Consider what becomes of the stock of goods, when a manufacturer or big retail merchant goes bankrupt or "busted" as the saying goes. It is estimated that about ten thousand merchants annually meet with business disaster—this is why our company exists. If the stocks are sufficiently large and the goods are new and desirable, they find their natural way to our great forty acre plant for distribution at a small added profit, to our thousands of customers, who in this way get the benefit of wonderful bargains. In many cases our prices do not even represent the original cost of production. We stand foremost in our line. We recognize no competition. That's why we are called "THE GREAT PRICE WRECKERS."

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Our stock includes practically "everything under the sun." It's in truth, from a needle to a locomotive. No matter what your vocation, or what position in life you occupy, or what your business, or how great a merchant you are, you have use for us, and we have the goods that you can buy from us to a decided advantage. The quicker you learn to recognize this fact, the sooner you will be "putting money in your pocket."

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If you intend building, you will lose money if you don't write us at once. Tell us what you want. We will answer you promptly and give you valuable information regarding building. Send rough pencil sketch showing the kind of house you want. We will make you a freight paid price that will save you big money on material necessary to build same. Every stick first class.

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Our Book of Plans contains 120 pages of different kinds of buildings. Everything from a 2 room Portable House for $117.50 to the finest kind of a residence.

Houses are completely illustrated showing the floor plans, prices, etc. And it's free.

Wire and Fence Prices Smashed!

Barb Wire Less Than 2c Per Rod

New Galvanized, heavy weight barbwire, put up on reels about 100 lbs. to the reel. Lot 2-CD-36 per 100 lbs. $1.95. Galvanized barb wire. Light weight, best grade, best made. Put up exactly 80 rods to reel, 2-point barbs. Lot 2-CD-28, per reel, $.140.

WIRE NAILS, Per Keg, $1.28

5,000 kegs, put up 100 lbs. to the keg mixed, all kinds together, regular nails, such as made by nail factories. Lot 2-CD 33, price per keg, $1.28. 1,000 kegs of 10 penny-weight regular new wire nails, 100 lbs. to the keg, while they last, per keg, $1.85. Write for our free Wire and Fence Catalogue. Gives valuable information to any land owner. Fill in the coupon below.

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Suitable for fences stay wires or any ordinary purpose. This wire is irregular, in length, ranges from 50 to 250 ft. and one gauge only to a coil. $1.00 per 100 lbs. Is in lots of 1000 lbs. Write for special quotations in other quantities.

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Everything arrived in good condition. I saved on the building; also heating plant and bathroom outfit about $1000.00 as this kind of lumber would be very dear here.
Signed (LEWIS YOUNG, Pennsylvania.

$700.00 Saved

I am perfectly satisfied. Don't be backward in referring to me, for you have done more than you agreed to. I saved $700.00 and also got better material, and a better house.
(Signed) JOHN J. DUNN, Ohio.

Satisfied With Furnace

The furnace I got from you is perfect in every way. I would not be without it one winter for double its price. If farmers only knew how easy it is to install it, they would not be without it.
(Signed) HENRY D. CHARTER, Canada.

Used 12 Years and In Good Condition

Some 10 or 12 years ago, I bought quite a bill of Black Corrugated Roofing from you, and only painted it twice since I laid it, and it is in just as good condition today, as the day it was laid. Please send me your catalog, as I expect to put up a barn next Spring and am looking for something for a roof as good as that bought from you last time.
(Signed) W. W. STODDARD Ohio.

Will Order More

Am pleased to say the roofing all here and in splendid shape. Allow me to congratulate you on prompt delivery. You will receive more orders from me.
(Signed) D. DUCELLO.

Recommends Our Paint

I have used your Premier Paint in this salt atmosphere for the past four years and find it better for this climate than any paint I can buy, no matter what the price. (Signed) W. A. WEIDE, Florida.

$13 BUYS COMPLETE BATHTUB

This is a white enameled, cast iron, one-piece, heavy roll rim bathtub; fitted with the latest style nickel-plated trimmings, including Fuller double bath cocks for hot and cold water, nickel-plated connected waste and overflow and nickel-plated supply pipes. It is 5 ft. long and is good enough to answer the needs of any one. Lot 5CD 101.

Hot Water Heating Plants

We are headquarters for steam, hot water and warm air heating plants. They are suitable either for new or old homes. It is easy to install one of these plants in your old building. For this great Fall Sale of ours we are offering a warm air heating plant large enough for the ordinary 5 room house, with all necessary plans and complete instructions for installing, for $45.00.

Iron Pipe and Fittings

Good iron pipe in random lengths complete with couplings, suitable for gas, oil, water and conveyance of all liquids; size 3-8 to 12 inches; our price on 1-in. per foot 3c; 1 1-4 inch at 4c per foot. Complete stock of valves and fittings. Send us your specifications.

AXMINSTER RUGS at 75c

We bought at New York Auction an enormous stock of high grade, brand new rugs and floor coverings. This is a sample of our money-saving bargains. Write for complete Free Rug Catalog, showing actual colors.

FURNITURE

We are the World's Bargain Headquarters for the Outfitting of your home, club, lodge or hotel, from the very latest to the finest. An assortment of Household Goods and everything such as will be found in no other institution in the land. Write for free copy of our Furniture and Household Goods Catalog.

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PENNSYLVANIA FARMER

AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

STABLISHED 1880 PUBLISHED WEEKLY

L. 35—No. 11. PHILADELPHIA, PA., SATURDAY, MARCH 14, 1914. 2 YEARS FOR $1.00.

The Purchase of Lime.

By Prof. JOHN H. VOORHEES,
New Jersey Experiment Station

Headle Dr T J
Rutgers College
814

It is no easy matter to buy all of the supplies eded on a one-hundred acre farm and at the same e have assurance that the purchases have been de efficiently and without error. A generation o it was much easier than it is today. At that e knowledge of scientific farming was much less d the markets were not so overcrowded.

Every successful farmer must pur- ase lime. Stop and think for a mo- ent of the choice of the various nds, the same kinds with different mes and the multitude of values l costs, not to mention the agricul- ral factors upon which its purchase pends. The ordinary burned lime lcium oxide, (CaO) is known as e, quicklime, caustic lime, stone- e, lump-lime, unslaked lime, etc., d there are any number of so- lled "prepared agricultural limes."

In order to understand lime and rchase it efficiently it is necessary know its source, its form or chemi- l composition, and since the advent the ground forms, the fineness of ision of each. Advancing explana ns of these points, lime occurs in ture as pure calcium limestone, cal- m-magnesium limestone, oyster ells, and shell marls. There are vast mations or deposits of pure calcium and calcium- gnesium limestone in Pennsylvania and neighbor- states, including New York, New Jersey, Dela- e and Maryland. Oyster shells are to be obtained the greater part at seacoast points, where oyster- is the chief occupation of the inhabitants, and r big cities where the oyster is used as food and the shells are a waste from easting-houses, [illegible] ants and hotels. The shell marls are not so gr[illegible] in importance because the number of deposits now being operated is small. This form of lime, however, is one of the best from an agricultural point of view because the deposits were laid down centuries ago and a large proportion of these substances is immediately usable in the soil without any grinding or burning. The marl deposits now being worked are limited to the coastal plain states. I know of one in New Jersey and I believe there is one in New York, one in Massachusetts, and one in Virginia.

MARL PIT IN SUSSEX CO., N. J. THIS MARL ANALYZES APPROXIMATELY 97 PERCENT CALCIUM CARBONATE, EQUIVALENT TO 54 PERCENT CALCIUM OXIDE OR ACTUAL LIME.

These sources of lime all occur in Nature as the [illegible] nate of lime or calcium carbonate. In its na- [illegible] it is not immediately available or usable [illegible] the purposes desired upon application to t[illegible] must be finely powdered or ground. The adve[illegible] powerful machinery for this purpose has been recent—within my own memory. Looking back, way back, into the days of our forefathers, they learned that the limestone rocks of the hills, as well as the oyster shells, changed upon the addition of heat. Use was made of this knowledge by building kilns and burning the limestone. We know now that the addition of this heat caused the liberation of a gas known in chemistry as carbonic acid gas, or carbon dioxide; and further that the heat caused a change in the form of the material; the resulting material being the oxide of lime, or calcium oxide. Because this oxide is an integral part of all forms of lime, it has been designated as a constant or basis upon which the content of actual lime in any form is determined. To this I will refer later.

The purest forms are usually sold as building material and the less pure to farmers as quick-lime, stone-lime, lump-lime, etc., for agricultural purposes. This form may, of course, be derived from the pure calcium limestone, calcium-magnesium limestone, and from oyster shells. Whatever the source, this burned lime has an affinity for water or air and will absorb either if either or both are brought into contact with it. To make this burned product fine, capable of even distribution and more

MARL READY FOR SPREADING ON FARM OF THOMAS INSLEE, SUSSEX CO., N. J. PUTTING LIME IN PITS IS NOT GOOD PRACTICE BUT HERE IT AIR DRIES, MAKING IT CAPABLE OF MORE EVEN DISTRIBUTION.

readily soluble, it has been the practice of the user to add water. This operation is called slaking. The amount of water needed is about one-third, by weight, so that the resulting product, water-slaked lime or hydrated lime, may be said to be quicklime diluted by combination with about one-third of its weight of water. The change which occurs is accompanied by marked physical changes; the lime swells in bulk, crumbles to a fine powder and generates much heat. The rapidity with which commercial lime slacks depends upon the amount of water used and the composition of the quick-lime. It is not a good practice to use water too freely because too much water or a sudden chilling of the partially slaked lime by cold water is liable to result in the production of a coarse, granular material in place of the desired fine powder.

As previously stated, the less pure forms are sold to the farmer. It is not wise to buy forms containing more than 10 percent of impurities because the slaking is slower and imperfect. Regarding the calcium-magnesium limes, I always feel like saying "when in doubt, don't", because they, too, slake imperfectly; and while it is known that magnesium will correct just as much and a little more acidity than calcium, yet the effects of magnesium in other ways have never been definitely worked out, even tho larger yields are sometimes secured.

The introduction of powerful machinery not so many years ago for crushing and pulverizing the original limestone rock and oyster shells has had its influence upon the market. It has heightened competition. It brought into operation a new method of making the lime of limestone available and capable of distribution. Two new forms of lime, ground limestone and ground oyster shell lime, both of the same chemical composition, and new methods of handling by shipper and farmer, were added to the original complications of buying and using this soil amendment. These are both in the form of carbonate of lime and the availability of any ground product desired from the original rock will depend under our conditions upon the fineness of division or the size of the particles.

Aside from the five kinds, burned limestone, burned oyster shells, ground limestone, ground oyster shell, and marl, many "prepared agricultural limes" have appeared in recent years. These the farmer should investigate as to price and actual lime content in comparison with other forms. It is my experience in two years' of purchasing for an agricultural co-operative organization that they are, except for a few, too costly. The manufacturers of some of these kinds of lime have capitalized the farmer's ignorance of chemistry and played on the shortage of farm labor to sell their products at prices far in excess of their actual value, everything considered. It is not my intention to mislead anyone to believe that these products or so-called "agricultural limes" are not just as good or that they are harmful in any way, but the price per pound of actual lime should be carefully compared with the price per pound of actual lime in other staple kinds. "Look before you leap," and think and figure before you buy.

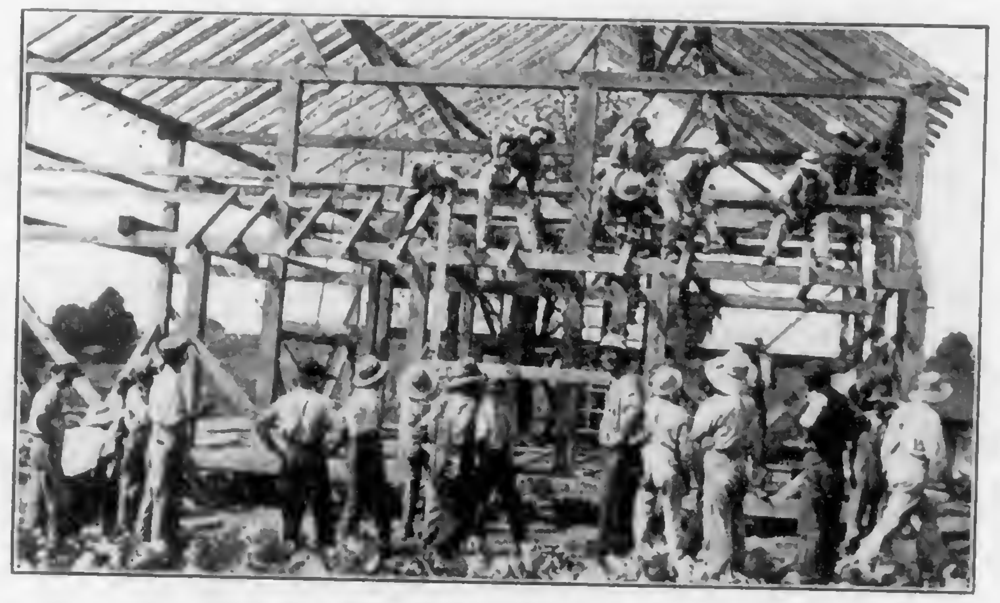
Assume that you have been offered several kinds of lime. For instance, ground limestone at $3.00 per ton delivered; lump-lime, quick-lime, or burned lime (which ever you wish to call it) at 14 cents per bushel, which, at 80 lbs. to the bushel is equivalent to $3.50 per ton; prepared hydrated lime, at $6.00 per ton, and ground burned lime—another "agricultural lime"—at $6.00 per ton, which are you going to buy? In the ground limestone there should be approximately 50 percent of actual lime, or 1,000 lbs. in one ton. That brings up the question of just what actual lime is. It is not easy to understand. It is really the part of lime which actually corrects acidity in the soil. The reason why there are different amounts of actual lime in different kinds of lime is because the actual lime—calcium oxide—is diluted either with water or with a gas known as carbon dioxide. Sometimes, as in the case of burned lime, it is in the form of calcium oxide and is actual lime except for the impurities which occur in all forms of lime used for agricultural purposes. To continue, the burned lime would contain 90 to 95 percent of actual lime, or approximately 1,800 lbs. in one ton; the prepared hydrated lime, 70 percent actual lime, or 1,400 lbs. in one ton and the ground burned lime 90 percent actual lime, or 1,800 lbs. in one ton. The amount of actual lime and cost per pound is always the first consideration. Perhaps the following table will help you to determine this factor.

Kind of Lime	Guarantee percent Actual Lime	Pounds Actual Lime in one ton	Quotation per ton Delivered	Relative Value Actual Lime
Burned Lime	90	1800	$3.50	$\frac{\$3.50}{1800}$ or 0.19
Ground Limestone	50	1000	3.00	$\frac{3.00}{1000}$ or 0.30
Hydrated	70	1400	6.00	$\frac{6.00}{1400}$ or 0.42
Ground Burned Lime .	90	1800	6.00	$\frac{6.00}{1800}$ or 0.33

METHOD OF CALCULATING RELATIVE VALUE OF ACTUAL LIME IN DIFFERENT FORMS.

This accomplishes one step. It shows that burned lime is the cheapest source of actual lime at the quotations given. The cost of handling and the fineness of division of the ground forms should be added to this table. These were discussed in my article of February 7th.

In closing, let me add that sometimes a two-cent stamp will save a dollar on every ton. My own experience as purchasing agent as mentioned has taught me the value of search. One quotation from one firm may be as good as ten, but on the other hand, the tenth quotation may save that dollar for you on every ton. Your agricultural paper and your Agricultural Experiment Station will help you in your search for a reliable source of lime or any other farm supply.



A LANCASTER COUNTY BARN RAISING.

THE BARN RAISIN'

No event in our rural life better illustrates the disposition of the farmers to get together and be of mutual help than the old barn raisings. At such a time every able bodied farmer for miles around leaves his work for a few appointed hours and drives to the scene of activities to shoulder his part of the burden and carry his share of lumber.

Sometime ago the owner of the barn shown in the illustration was kind enough to permit some bed clothing from a neighbor's who had just been burned out, to be stored in his barn, out of the path of a coming rain storm. Some live sparks lay hidden in the clothing, and within a few hours after the kindly act, the good Samaritan's barn was also reduced to ashes. The accompanying illustrations portray two stages of the rebuilding of the barn, on the farm of Benjamin D. Mellinger, Lancaster County. "Abe" Herr was master carpenter.—Dr. D. McCaskey.

FARM EXPERTS AGAIN

After reading the article in the Pennsylvania Farmer of February 21 entitled "Farm Experts and Expert Farmers," I am led to believe that a somewhat wrong impression is given of the duties of so-called County Agricultural Agents. The following points, taken from the last issue of the Farm Management Monthly, published at the Office of Farm Management, Washington, D. C., are apropos, and I feel will prove of interest to readers of the Pennsylvania Farmer in telling just what constitutes the work as outlined for County Agricultural agents.

County Agricultural Agents are sometimes referred to as "county advisers." This implies a misunderstanding of the real work of the agent. Advisory work is a part of the agents' duties, but it is a minor part. Farmers quite generally resent and refuse to support the county agent whose work is outlined to them primarily as that of an adviser. As we conceive of it, the county agent has about half a dozen principal functions:

1. He studies the agriculture of the county to learn what is being done and what is worth while agriculturally in each part of it. This study includes farm, financial and organization surveys.

2. He gives the results of his studies to farmers, not in the way of advice but as facts observed and conclusions drawn. This is done thru the local press, lectures, institutes, circulars, short courses and personal interviews.

3. Based on these local studies and the ascertained need of the county, clubs, associations and the like are organized and the individuals solicited to undertake definite lines of agricultural improvement on their own farms. Organizations are also formed for co-operative buying and marketing and the standardization of farm products.

4. He co-ordinates all existing agricultural agencies within the county so that all may work unitedly and efficiently.

5. He develops local leadership. The task of improving the agriculture of an entire county is so stupendous that the agent must be primarily an administrator. He must inspire and accept the help of voluntary assistants.

6. He acts as the connecting link between the scientists of the research institutions of the state and nation and the farmer, presenting the results of investigations in such a way that the farmer can use them, and calling the attention of scientists to the local agricultural problems of the county and soliciting their assistance.

7. He gives advice. This may relate to spraying, seed treatment, mixing fertilizers, combatting insect pests, cultural practices, or other miscellaneous matters which are the stock in trade of every well informed agent.

We place the giving of advice seventh on the list because in actually improving the agriculture of the county it is probably of least importance, altho in point of time it may be the first work undertaken.—C. F. Preston, County Agent, Chester County, Pa.

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Farm Crop Notes

By E. P. KESTER

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Improving Run-down Land

Two letters received recently from two men widely separated tell the same story and ask similar questions. Both have recently bought run-down farms. Neither has money with which to make improvements. Running expenses, as well as a living, must be made from the farm. One of these men has worked on a farm all his life, while the other is a mechanic. The mutual concern is, how to increase productiveness most economically.

Duplicate situations can be found in every section of the country. Not only by beginners is this a pertinent question, but honest inquiry is being made by men who have been farming for years. Too often we see the pathetic situation where hard work has not brought even comfort and the necessities of life to the farmer and his family, yet with right methods of handling, the soil would have responded and at the same time increased its power to produce.

One promising characteristic of these inquirers is that they are starting new and are willing to learn. Many farmers feel that there is no hopefulness in their situation since their methods and practices have not brought them success. It would be interesting to follow the course of these two men for the next few years. The difference in their success will largely represent the difference in the inherent qualities of the men themselves, because "it's more in the man than in the land."

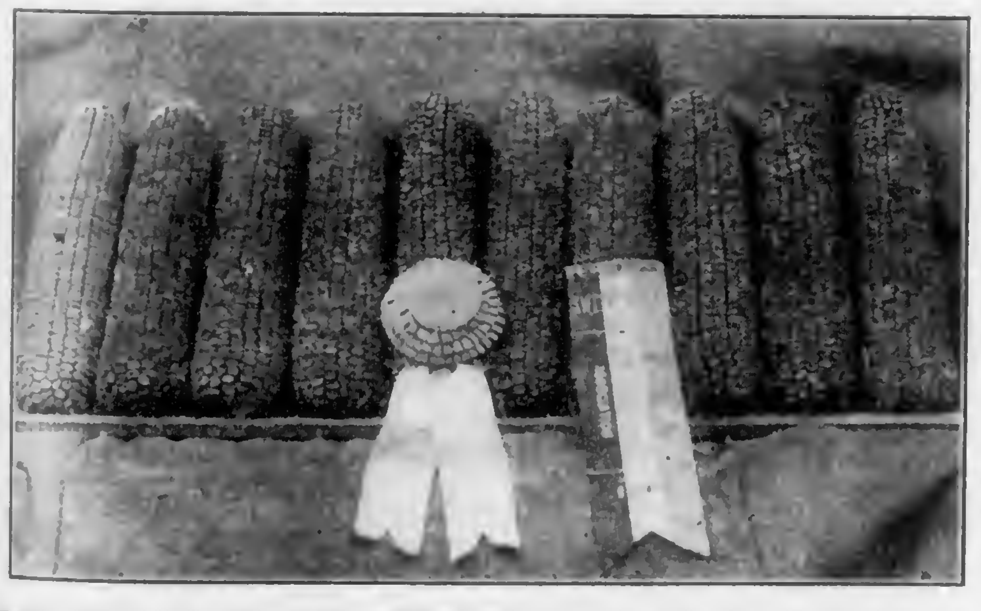
Success under such conditions is worth infinitely more to a community as an object lesson than are the Alladin-like creations of millionaire farmers whose developments, made possible by limitless money, more often dazzle and discourage than help the neighboring, practical farmers. It is possible that too little has been said or published on what we might call natural methods of soil improvement, and too much said, relatively, about percentages, pounds, elements, chemical combinations, etc. All these things are important and are a part of the study of soil improvement, but the over-emphasis has led many a farmer to think only in these terms and to guage his possibilities and hopes by his ability to buy foreign material to apply.

A great number of farmers are practically in the situation of these young men; they must make a living and improve the soil at the same time, with no capital or other income. That it can be done is proven by individual successes found in every part of the country. The secret of their success, if it may be called a secret, is invariably found in what may be stated in a single sentence: They have developed and maintained the right physical and mechanical condition of the soil.

I wish it were possible to sear that sentence into the minds of every farmer, in big letters. The soil must be considered as more than a repository for plant food brought from some other source. Even the so-called worn-out soils have great quantities of most elements of plant food in them. But it is "locked up." Nature will let man rob her for a while, then she turns the key on her stores of plant food. But she will hand the key over to the man who will treat her right and put the soil in the right physical condition, use a sane rotation, cultivate intelligently and thoroly, assist in taking care of her generous supply of moisture, and grow plants that will furnish her bosom with the life-giving element, nitrogen.

It is comparatively a slow process, but the results are worth the waiting. Agriculture is unattractive to much of the present-day impatient generation, mainly because Nature does not have a pay-day every two weeks. Natural processes can not be hurried, but he who works with them faithfully and intelligently learns one of the greatest lessons of life, patience. There is no short-cut, no royal road to success in restoring fertility, but there are shorter and longer ways. There is no magic wand that can be waved over the land with a "presto, change!", and make fatness spring up, like genii, from depleted soil.

The writer proposes to write a series of articles dealing with methods of handling the soil and the growing of crops that will improve its physical and mechanical condition and increase its productiveness. It is largely in this phase of the question of soil improvement that the poor man's hope lies.—R. P. K.



TEN EARS YELLOW DENT CORN. WINNER SWEEPSTAKES AT MARYLAND WEEK SHOW AND INTERSTATE CONTEST, 1913. Grown by A. B. Twining, Harford Co., Md.

VALUE OF BREEDING IN CORN

The 10 ears of corn here shown are of the Yellow Dent variety, grown the second year in the East from pure-bred seed from Illinois puchased in the spring of 1912. On account of selection and acclimation, it did much better in 1913 than in 1912, and I am told by experienced men that it should do still better this year. Some of the ears were in the sample of ten that won sweepstakes for the Eastern Zone at the National Corn Show at Dallas, Texas. We also had Champion single ear and Champion 10 ears white.

This corn was planted on an old alfalfa sod plowed last spring and fertilized with 400 lbs of 2-9-5 goods to the acre. The ground was hardly as well prepared as it should have been as the very stiff sod was hard to work up and in the pressure of spring work I did not give it as much time as it should have had. I believe in the old adage, "Work corn before you plant it." The seed was hill dropped with a corn planter in rows 3 feet 2 inches apart, and about 30 inches apart in the row, and thinned (when much too large) to two stalks to the hill. It was cultivated three times with a walking double worker (five times would have been better) and run thru once in the row with single cultivator when I sowed clover and alfalfa seed when corn was about ready to tassel. The corn is a medium early variety with ears ready for cutting in about 110 days from planting.

Owing to the fact that I am raising both white and yellow corn, and having them widely separated, I only had a small piece of yellow corn this year. The ground measured 3 2-3 acres and yeilded 85 bbls. as we measure corn here in Maryland (a barrel equalling 5 bushel of shelled corn) making 116 bushels per acre—the best crop I have ever raised. As to preference of white or yellow corn, it is still a question with me as to which I like the best; somewhat like the love-sick swain who said: "I could be happy with either one if the other wasn't there."

My white stock also came from Illinois about 8 years ago and is known as Boone County Special. On 11 acres of white corn last year, check planted 3 feet, 4 inches by 3 feet, 2 inches, the field averaged 18½ barrels (92½ bushels shelled corn) to the acre, but about three acres of this was a light sandy slope that did but poorly, owing to the dry spell we had during the season. I think, with all conditions equal, that one kind would do as well as the other. As to the feeding values, a chemical analysis I had made a few years ago showed that the white and the yellow varieties were about equal in content of protein and fat, and both were ahead of the mixed breeds.

I have not tried the ear-to-row method in breeding, but aim to pick all my seed that is to grow seed so that the whole field is a breeding plot and I do not believe that a more complicated method would give me any better results. As in our live stock, so in our corn, "Blood will tell."—A. B. Twining, Evergreen Farm, Harford Co., Md.

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Horticulture

PLANT BREEDING AND SEED SAVING BY FARMERS

STONY LAND MADE PROFITABLE BY ORCHARD PLANTING.

(Continued from last week.)

Nearly, if not all, vegetables and fruit plants, as well as our cereals and grasses, have been evolved from the wild or semi-wild plant. Louis De Vilmona evolved the carrot and parsnip from the wild one growing in fields and hedge rows. The strawberry of today was bred from the natural or semi-wild plant. The tomato, cabbage, turnips, beets and most of our grasses came thru the same course of procedure.

When the beet sugar industry first began it was found that the beet carried too small a percentage of sugar, only from 5 to 7 percent. It was found by selecting individual mother beets that carried a larger percentage of sugar than their fellows, the percentage of sugar might be increased. By following this practice generation after generation a breed has been evolved that now carries from 18 to over 20 percent of sugar. When the noted Frenchman began with the carrot and parsnip it was with the wild plant, selecting at first those plants that had vigor and a more fleshy root. Then, by careful selection generation after generation, those plants that showed tendencies along the line of larger root development, the carrot and parsnip of today were produced. Cabbage originally produced only leaves. Man, with his knowledge of breeding by selection, has wrought out the hard, solid, compact cabbage head that we enjoy today. One could continue illustrations along this line almost indefinitely, for practically everything we have came the same way or by hybridizing. But that is another story.

The thought may present itself that while all this is true and we now have such fine fruits, vegetables, cereals, grasses, etc., why bother our heads any more about it; let well enough alone. That, apparently, is just what we are doing. We forget or do not know that since all these various fruits, vegetables, etc., have come to us thru generations of careful work, that just as soon as this careful work ceases, the particular plant begins to go back to its natural state and condition, namely, the wild state. Hence, just as soon as seeds are gathered from anything and everything that grows, deterioration, low vitality and less vigor are sure to follow. The rule of "like begets like" holds just as true in plant breeding as it does among animals, poultry or even the human race. Nature has no opportunity among our cultivated plants to make her own selection; hence, it is not a case of the survival of the fittest among cultivated plants.

But what should the farmer do? It is needless to say "I am helpless. I know nothing about plant breeding." Every farmer knows something about plant breeding. Many a time you have observed a beautiful stalk of corn with one or possibly two ears on. It attracted your attention because it was better than most of what you had seen. Often the cabbage grower has found one or two, possibly half a dozen cabbage plants that produced larger, better-shaped or more compact heads or showed something that told him that if all his crop was like those few his yield would be greatly increased. This thing occurs daily among crops and farmers. Now why not, since we know that like begets like, select the best we have for seed. In the beginning of an operation of this kind there are some fundamental principles to be observed:

First, all plants produced from seeds are the result of two parents. Now if we could control the male parent the work would be much easier and far more satisfactory. But as this can not be done readily by the farmer we have to be content with a slower process thru control of the mother plants.

Second, in trying to maintain or improve any variety or strain of plants by selection the breeder should not have too many ideals in mind at one time. First form an ideal; know just what you are going to try to do and then conform rigidly to that. In other words, if a breeder is aiming for size of fruit, that should be his first consideration. If he is aiming for earliness, that should be the first attribute sought regardless of all others. If he is aiming for maximum yield or volume of crop, then that should be his first consideration.

The breeder should never attempt to breed for more than one important point at one time, because nature does not work in two divergent directions at the same time. For example, earliness and heavy yield do not go hand in hand. Neither does large size increase the volume of crop; we obtain one at the expense of the other.

Third, constitutional vigor in any plant is a prime factor, remembering always that the leaf surface is what makes for vigor. Leaf surface should be one of the breeder's considerations, and an important one it is. When we consider such crops as lettuce, cabbage, etc., remember that all nature is trying to do is to produce seed to perpetuate the species. She is not trying to produce something for humanity to eat or wear. In that effort, if a large cabbage head or a large well developed head of lettuce is produced, and that head is removed for use, you have taken away nature's storehouse of plant food; the very material that the plant made and stored away in that head to be used by that plant in its effort to produce seed. Hence, when seeds are grown from cabbage stalks that have had the heads removed, the seed of necessity must be weak and of low vitality.

If farmers would interest themselves along this line they would soon have a higher opinion of themselves and of agriculture in general. Furthermore, the gain in money value and satisfaction would be out of all proportion to the labor involved. The best method of procedure in the outset is, first, secure the best strain or variety of whatever plant you want to grow. Grow it the best you know how. When the crop is at its best, go into the field, first knowing just what your aim is as indicated elsewhere in this article. When you have found your ideal plant or plants, be sure you have taken the following into consideration: The whole plant as a unit. The shape of the plant; its amount of foliage and stem growth; where fruit is located on the plant, whether in a desirable or undesirable position; the shape of the fruit, quantity, quality and time of maturity; also health and constitutional vigor of the plant. A further examination should be made from interior appearance of the fruit and with such fruits and vegetables as carry succulence, flavor and interior qualities these should all be considered, eliminating all but the desirable. When this method is carried out religously, year after year, the breeder will soon see improvements.

After making the final selection, separate all small and light seeds from the lot. This may be accomplished, first, by floating off in clean water all that will float; second, blow out by wind all light seeds; third, screen out all small seeds. When all this is done we have left only the very best for our next crop, and those are none too good. It has been proven repeatedly that large, plump seeds of almost any plant produce a stronger plant; one that grows faster, matures its crop quicker and yields better than the same seeds of ordinary size.

The radish growers near our large cities found long ago that by planting only large, plump seeds they could mature one crop more during winter in their green houses than they could by using seeds of ordinary size. The lettuce plant has been so improved right here under my own observation by careful selection, as here indicated, that it will now head so uniformly that the whole crop can be harvested in less than one week, thus not only saving time but producing a far more uniform product with a higher commercial value. This topic is so broad the writer hardly knows where it ought to end, but perhaps enough has been said.—C. C. Hulsart, Monmouth Co., N. J.

HOT BEDS

There is usually one family at least in a community that has a hot bed. The crops of lettuce, radishes and other vegetables, as well as flowers, which they are able to enjoy as late as Christmas and in the early spring, are the enjoyment of all, yet this is often as far as it goes. The fact is, anyone that has a small piece of ground and can afford the expense of a small amount of glass and a few boards, can have a hot bed and run it successfully. Manure may usually be had for nothing.

The best location for a hot bed is on the south side of a building or of a tight board fence. The size of hot bed sash is commonly three by six feet.

After the size of the bed has been determined a frame or box without top or bottom is made of just the right size to admit of using the sash for a cover. The sash should slant to the

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south, consequently the front of the box will be lower than the back. An eight-inch front and a twelve-inch back will be about right, tho many other forms are used. A hole is now dug where the bed is to be, of the same size as the frame, to hold the manure which furnishes the heat. The depth of the hole will depend upon the degree of cold that it is expected the growing plants will stand. Zero weather will require 30 inches of manure, while for late fall or early spring usually a depth of twelve inches will suffice. If a twelve-inch layer of manure is decided upon, the excavation should be eighteen inches deep; the extra six inches to be filled in with soil in which to grow plants.

The manure should be collected a few days before seeds are to be planted or plants are to be set out. Fresh horse manure which is mixed with one-third of fine straw is commonly used. This is placed in a pile to ferment, which it will begin to do in a few days if kept moist. When steam is given off. the pile is forked over, throwing the outside toward the center. After a few days the manure will become heated a second time, when it is ready to put in the bed.

In filling the beds put in a layer of manure at a time and press it down firmly with the feet. Care must be taken to see that each layer is spread evenly and packed thoroly. The frame is now placed so that the bottom will be a little below the surface of the ground and covered with the sash until the bed is heated thru. When this has been accomplished the surface of the manure should be made smooth and the six inches of fine, loamy soil filled in. The bed should be allowed some more time to warm the soil, when it will be ready for seeds and plants. In the meantime the frame should be well banked on the outside with the same heating material.

Such a bed should give off heat for five or six weeks if made in the early spring or late fall.

Covering of some kind must be provided for the beds and be put on before the sun gets low in the afternoon and then allowed to remain until 9 or 10 o'clock in the morning, depending upon the the weather.

Great pains must also be taken with the watering and ventilating. Water only during the middle of the day so that the surface soil and the plants may have time to dry before dark. Otherwise the dreaded damping off of the plants may be induced. Ventilation is required for the same purpose. Moreover, there is a large amount of injurious gases given off from the manure which must be allowed to escape. Even in the coldest weather ventilation should be provided, if only for a short time each day.

If such crops as lettuce, radishes, onions and spinach are started in March, tomato and cabbage plants may be started after these crops are off. Plants for the garden may be grown in this way which are superior to those ordinarily found upon the market.—W. Paddock, Colorado Agricultural College.

The Orchard Service.—State Zoologist Surface has instructed his orchard inspectors and demonstrators to begin the collection of data regarding orchards on the plan recently outlined in this paper, without delay. Already hundreds have offered information for the card index of orchards to be made at the Capitol and it is expected that much valuable data will be available before the end of the summer.

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	10	5			1450	200	350	$13.16	$12.08
1	8	5	50	150	1100	200	500	$14.81	$13.98
2	8	5	100	300	1000	200	400	$18.00	$17.25
3	8	5	200	300	1000	200	200	$20.55	$19.80
2	8	10	100	300	1000	400	200	$22.10	$21.35
3	8	10	200	300	1000	400	100	$24.65	$23.90
3	6	10	200	300	700	400	400	$22.78	$22.25
4	6	10	300	300	700	400	300	$25.33	$24.80
4	7	8	300	300	850	350	200	$25.24	$24.60
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Poultry

FACTS ABOUT INCUBATORS

The hatching and rearing of poultry for egg production would be quite out of the question if it were not for modern incubators. No experienced person will attempt to raise fowls entirely for egg production and depend upon the hens for hatching the chicks. Not only are they poor setters, but it pays better to keep them on laying and use artificial means for hatching.

There are many good incubators on he market that will give excellent satisfaction when properly handled. It is best before investing extensively in any kind of incubator to understand the machine thoroly. If after trying a certain make of machine it has given good results, then additional machines of the same kind may be purchased.

There are two things that confront the prospective buyer of an incubator, first, that of the price. Too often the price governs the kind of incubator that is purchased, regardless of the make or reputation. I have in mind a man who bought several machines because they were low in price and after one season's use he offered these cheap machines for half the original cost.

The difference in price lies in the difference in quality of the machines and not in their popularity. A good incubator should be well constructed and built of good lumber. It should be of lasting qualities and economical of oil. The heat supply should be perfectly and easily adjusted. The regulator should be sensitive to sudden changes of temperature, which is very necessary to a good hatch.

The best results are generally secured when the incubator is run in the cellar or a partly submerged room. It is much easier to keep an even temperature in a room of this sort than it is in an upper room. We have our incubators in a room that has been partitioned off from the rest of the cellar. There should be no drafts in the room and yet plenty of ventilation and light, which two factors are very essential. They should drop down at the top to afford good ventilation.

The new machine will need no disinfecting but the old one should be thoroly disinfected with a ten percent solution of zenoleum or creoline. In some experiments either of these coal tar preparations have reduced the percentage of chicks troubled with white diarrhea. Prof. Graham of the Ontario Experiment Station says, "Use sulphonal to wash out the entire inside of the incubators previous to putting in the eggs. I find the percentage of livable chicks considerably increased". A five percent solution of carbolic acid is also good for disinfecting. Never use kerosene oil in the incubator for this purpose. The lamps should be started and the machine kept closed for twenty-four hours, then open them and allow them to air out thoroly. If this is not done the disinfectant may do more harm than good. The incubator should be free of any strong odor before it is used.

The incubator should be run without the eggs until it has been regulated and the operator is thoroly acquainted with the adjusting of the machine. The disc should be raised about a third of an inch up from the heater when the thermometer registers 101 to 101½ degrees. After it has been adjusted to run evenly the little bur at the top of the thermostat should not be moved again, the raising and lowering of the temperature being generally controlled by adjusting the wick. After the incubator is running rightly the trays can be filled, but the eggs should never be piled on top of each other. We have tried crowding them in at first by setting them with all the small ends down and putting as many as 300 eggs in a 240-egg machine but I do not think it pays after all. When we do that we cannot turn them until we test on the third day and I would rather turn them on the second day if possible.

At the end of the third day the white eggs may be tested, while it is necessary to let the brown eggs stay in a few days longer. The infertile eggs can be used for cooking purposes for they are just as good as ever.

A BUNCH OF FLUFFS.

As our cellar has a tendency to be very dry we always supply extra moisture by the use of sand trays. These trays cover the entire bottoms of the machine. They are galvanized iron and can be secured of a tinner. They are removed the 19th day and all the slides are closed until the hatch is about half off, when they are opened up again. After the hatch is all out, which should always be at the end of the 21st day, we sometimes give the little chicks some luke warm water to drink, hardening them off by bracing the incubator doors open so that the change, when they are removed to the brooder, will not be such a shock. We always leave the chicks in the incubator until they seem to be pretty hungry and chirp considerably; frequently until they are 72 hours old. There is plenty of nutriment in the little chicks' body to last them 3 or 4 days and it is folly to take them out of the incubators too early and attempt to make them eat.

The lamps should be cleaned after every hatch and the burners boiled and new wicks placed in them.

Finally, I would advise the purchase of an incubator that is large enough to bring out all the chicks desired in one or two hatches, in which case they will be nearly the same age and much easier to raise. Of course, the incubators will have to be moved out of the cellar when not in use, unless one has an exceptionally dry cellar. In order to make them convenient to handle and get thru doors we use 240 or 250 egg size machines.—C. C. McCurdy, Crawford Co., Pa.

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Improvement of Permanent Pastures.---No. I.

By JOHN H. REISNER, Cornell University.

A TYPICAL WEED-GROWN PASTURE. A PROLIFIC SOURCE OF WEED SEEDS AND A WASTE OF LAND.

Present Condition in Pasture Lands

Never has the interest in permanent pasture lands been as wide spread as at present. Never has there been greater need of interest and intelligent action in reclaiming or improving them. We are right in thinking that the present condition and methods for the successful improvement of our permanent pasture lands present one of the most important and serious problems in our farm management today.

In some sections the situation is acute. In practically every section, the pasture problem is present and being recognized as such. The following will serve as an illustration. Ten to twelve years ago the writer helped harvest the last hay crop from a field that had been in meadow and pasture—so far as it could be determined from the most authentic sources—for approximately 70 years. In this time the largest part of the field had never been plowed. A crop of hay—timothy and bluegrass—had been harvested annually, and after harvesting the meadow was used as a fall pasture. Suddenly it gave out, and since that time it has not only not produced a crop of hay, but has furnished scanty pasture for the dairy herd. In the past fifteen to twenty years the writer has observed the gradual deterioration of many once productive pasture lands. It seems to be regional rather than local in area and importance. Doubtless these same observations have been made by many others.

We are also coming to think along the lines of an old Flemish proverb which reads "No pasture, no cattle; no cattle, no manure; no manure, no crops;" meaning, of course, that good grass lands are the foundation of good agriculture. With the deterioration of our grass lands, both permanent and temporary, we are almost bound to suffer the impairment of the very foundation of our agriculture. This applies directly to Pennsylvania agriculture.

The problem is important from a second standpoint, that of actual land area. From the most reliable data available, approximately one-third of the improved farm land in Pennsylvania is in permanent or temporary grass, used for grazing purposes only. Further, the unimproved farm lands, whose area is equal to about one-third of the total lands in farms are used largely, if used at all, for grazing. A conservative estimate would be that from 30 to 40 percent of the total land area in Pennsylvania is now being used, or may be used for either temporary or permanent grazing purposes.

A third important consideration relative to the problem is that of markets, and market demands. Pennsylvania has easy access to all great Eastern markets, in many ways the greatest in the world. The market demands for perishable and bulky products can be met by production most profitably according to their nearness to the source of the demands. Milk and hay must be supplied by the area closest the markets. Both require grass lands. Good pastures and meadows become indispensible, and they are becoming more so with the increasing market demands for such bulky and perishable products. With the development and improvement of the dairy comes a more diversified and steadier money income, and a more diversified farm management in order to profitably use the by-products.

From the standpoints, then, of market supply and demand, of diversity of income, of the large area invested, and from the standpoint of permanency of our agriculture, the importance of our grass lands assumes a larger and more significant aspect.

Classification of Grass Lands

In this classification only grass lands are included that are used permanently for grazing and are never or seldom plowed up for the use of a cultivated crop before reseeding for pasture. They may therefore be classed (1) as improved farm lands not in crops nor in temporary pasture, (2) as farm lands unimproved and (3) all lands other than farm lands that are not improved but including woodlots. Under the first class come the natural meadows usually found where there is running water, generally the most desirable and may become the most valuable for grazing purposes. In addition there is much land of low fertility over-run with weeds and brush which, combined with location and topography, can no longer be cultivated profitably for crop production.

The unimproved farm lands include the wet, low, undrained and overflow lands; stony lands which can never be cultivated; hilly lands and steep slopes which, with stony land, have been deforested, much of which should be reforested; and brush lands. This class of lands, all of which is or may be grazed, seems to present the most difficulties for successful and profitable management.

The third class of lands, including woodlots, are essentially forest lands, and altho they are of considerable importance in certain sections of the state, the first two classes are of such greater importance that they should receive, for the present at least, our more serious consideration. When we have succeeded with them, then it will be time to look more carefully into the latter. Further, we must put our investment of time and money where it will bring the largest and surest returns.

Causes of Deterioration

An understanding of why and how these pasture lands have deteriorated is fundamental in understanding how they can be built up again, and in determining what methods can be used with surest chance of success. The first cause is probably the lack of appreciation of the value of these lands and what they needed or would need, and consequently their neglect. They have been more or less left to nature and the dairy herd, and no particular care given to them.

The second cause, and probably the most important, is grazing, either too early, too close or too late. Too early grazing, if the soil is still wet and heavy causes excessive packing and puddling of the soil, making plant growth extremely difficult if not seriously injuring root development. Further, plant growth is affected by having the young leaves eaten off before a sufficient amount of food is elaborated and stored in the plant for its own future use. Too close grazing may be accompanied with even more serious results. No organic matter at all can be returned, with consequent loss of humus to the soil. Evaporation is intensified, and if it is a region of high temperature positive injury may be done to the roots. The effects of too late grazing in tho fall are obvious. The conditions of wintering are made more difficult by the removal of the green matter which should be allowed to remain on the ground as a protective covering, and the plant can store less food with which to pass thru the winter.

A third cause for deterioration is the increase of weeds and brush. Generally, weeds do not crowd out the grass. When the grass gets thin, the weeds come in and when once started they are usually quick to make use of every opportunity to further increase. When the grass is out and the weeds come in, then follows brush in nature's rotation, and the result is usually a worthless pasture. The elimination of grass and the introduction of weeds is often due to lack of fertility in the soil. Some of the necessary plant food elements may be actually lacking, or there is lack of moisture and actively decaying humus in the soil to cause the solution of the minerals present but unavailable. This is quite often the case where the number of pasture plants is limited to one or two instead of to five or six. Competition for food is generally keener among the plants of the same species than between the plants of different species.

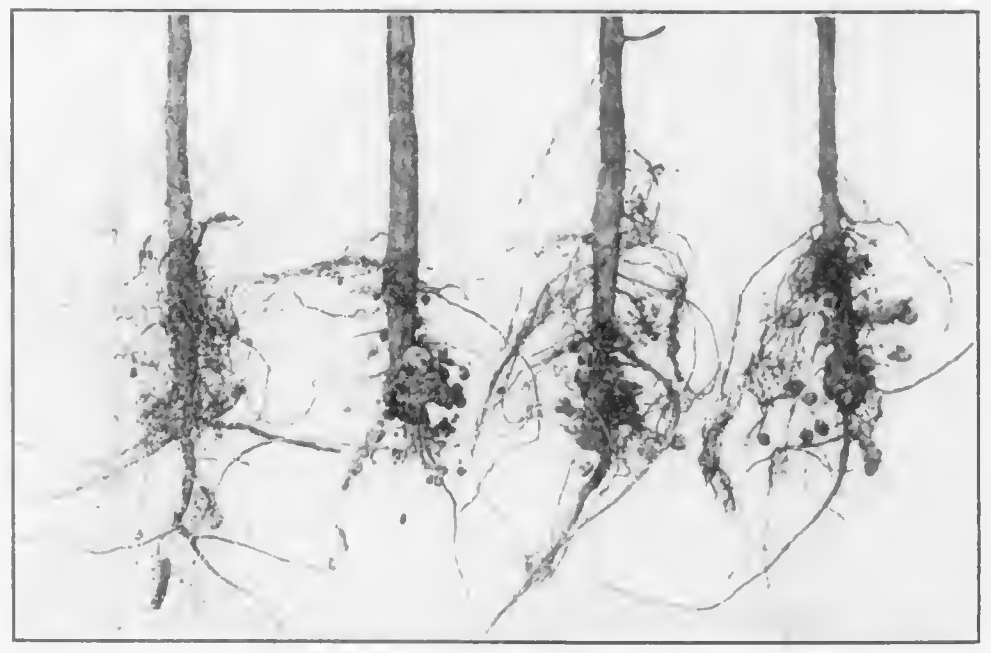
The last cause is lack of adaptation, first of the grass to its environment and second of the land for pasture purposes. Many pastures die out because the plants can not thrive under the given conditions of soil, moisture, fertility and exposure; or if the plants do not die out, those that survive may be such as are not desirable for grazing purposes. Further, many of the lands are not adapted to pasture at all. They are forest lands and should be reforested if they are ever to be of any value to their owners.

NOTE.—This is the first of a series of articles on this subject. The second article will appear in an early issue.—The Editors.

SOY BEANS AGAIN

Not so long ago the editor of a prominent farm journal told me that he had decided not to recommend the soy bean for use except with corn or other materials in the silo; that this was, to his mind, the best way in which to use this valuable protein supplier. Of course that would mean that the use of the plant would be confined to a comparatively negligible number of farms. But all farms need protein producers; and while it is probable that all farms need silos, as well, why confine the use of a valuable plant to those who have money and initiative enough to erect silos?

Moreover, there are a very great many farms that need the soy bean for another reason—the restoration of humus and nitrogen of which the soils have been depleted thru drawing too severely on the land without paying back the drafts. What particularly brought this matter to my attention at this time is a letter just received from a man who is regularly engaged in mercantile work in New York City, but who has a farm in the foot hills of the Catskill mountains, which he is trying to bring back to a state of fertility largely by the use of leguminous crops. I quote from this letter as follows:



NODULES ON ROOTS OF SOY BEANS GROWN FROM INOCULATED SEED.

"Owing to the delay in getting inoculating fluid, my beans got into the ground so late that they needed about one week or ten days more to ripen when frost came. Altho the piece of ground where they were tried was rather poor and the weather immediately and during the whole remaining season very dry, they grew fairly well. When killing frost came most of the beans were immature and green, with a few just ripening. Under the circumstances I decided to let them stand in the field with the idea of plowing them under in the spring, and re-seeding this plot with soy beans to get it well inoculated.

"On Washington's birthday I went to visit my farm and going thru the field found my soy beans sticking out their heads from beneath over a foot of snow. I picked off a few pods and to my surprise found that practically every seed had ripened and become black, proving that even tho the plants had long ago been killed by the severe weather the seeds continued to ripen. One row not inoculated was very much poorer than the rest."

This experience is one I have gone thru with repeatedly; and I happen to know that it has also been gone thru with by one of our experiment stations, in a deliberate test made to determine whether the soy bean had this power or not. But the curious fact, and one worth considering, is that some of the varieties, notably the one referred to above (Wilson), have the power to retain seed so that it can be harvested successfully in the spring, and the alternate freezes and thaws of winter do not apparently affect its power of germinating.

In my first experience of this sort, seed taken from above and below the snow line February 1, germinated over 97 percent; the experiment station test was not so high, because of a rain which froze on the pods and remained for some time. The first year we got caught by frost, (waiting for the ground to dry), we had about five acres that staid out all winter. In the early spring we turned our pigs loose, took them to the field once; and then, each morning, would let them out of the pen. It would have required a double-quick lens to have taken a moving picture of those shoats going for that soy bean field.

Is there any other crop that will lie out all winter and still furnish first-class seed or feed as you may desire? And why must we wait for silos to grow it?—Abram Bunn, Bedford Co., Pa.

ROUNDING OUT THE FEEDING SEASON

The old adage about "half your corn and half your hay still in the barn on Candlemas Day" is familiar to all. Doubtless this a pretty correct dividing line for the winter, yet I have often thought that while but half of the fodder may have been consumed, the quality has deteriorated so much that it is far less valuable. This is particularly true of corn fodder. Not only is it of less value in nutrients, but the cows do not eat it so readily, showing that it has lost much of its palatability. Oats and pea hay has also lost some of its value, as the mice have probably consumed more or less of the grain.

Silage seems to be the one food that does not decrease in value as the winter advances. Fortunate indeed is the farmer who finds his silo still holding a goodly supply for the March days. At this season the appetite of the cow seems to require something different, yet they never seem to tire of the silage, no matter how much they may pick over the other fodder. A good plan to follow is to feed the other things out in the early winter, reserving the bulk of the silage for the early spring days if the supply is limited.

Next in value to the silage comes the hay of legumes. Peas and oats, tho not as good as earlier, will still be relished by the cows better than the feed of timothy. Clover hay, properly cured, is a better fodder, and alfalfa, where that crop is raised, is one of the best. Leguminous hay seems to keep up the strength of the cows better than common hay. It is of necessity true that the cold of the winter will have done its work with the cattle to a certain extent and their vitality will have been taxed by the inaction. As the winter advances they need good food, and silage and legumes make the best.

Mangles are grown by many dairymen and at this season they may be fed with excellent results. A liberal quantity may be fed to the milkers daily with no harmful results. Rutabagas must be given with more care, else the milk may be tainted. Roots help to keep the digestive organs in fit condition, being especially valuable where the feed is largely of red top or timothy hay. They also increase the flow of milk to a considerable degree. In the spring they are in better condition than when dug, provided they have been kept from freezing.

Stock molasses is sometimes fed mixed with cut fodders. This adds considerably to the palatability of the food and doubtless helps the cows to assimulate the necessary amount of nourishment. Oil meal is fed, but care should be observed, else the butter may show the taint. Two or three pounds per day is about the limit for milking cows. The grain ration should be regulated by the other fodder available. Where common hay forms the principal item, more grain is necessary.—Charles H. Chesley.

Testing The Dairy Cow.—Circular 122 of the Ohio Experiment Station at Wooster, O., describes the following steps in milk testing. Secure a representative sample, measure out the required amount of milk with a 17.6 c.c. pipette and deliver it to the test bottle; add 17.5 c.c. sulphuric acid for whole milk, 20 c.c. for skim milk; mix gently but thoroly. Place in centrifuge and whirl at full speed for 5 or 6 minutes for whole milk and 7 or 8 for skim-milk. Add hot water to bring the fat up to the neck of the bottle to the 8 or 9 percent mark. Give final whirling at full speed for at least one minute. Read the test at 125 to 140 degrees Fahrenheit. Record the test and empty the bottle immediately; cleanse thoroly by shaking to remove sediment.

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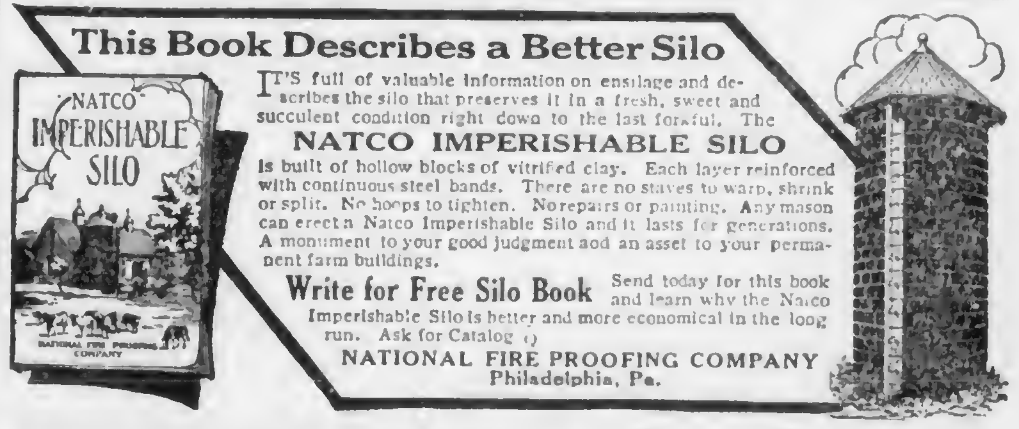

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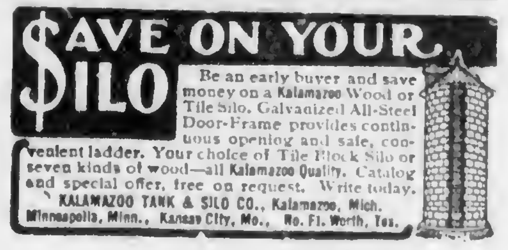

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Philadelphia, Pa., March 14, 1914.

Maryland College Bill

While the present situation of the Maryland Agricultural College may not be generally understood, several things stand out upon which there is full agreement. (1) Maryland Agricultural College has not been as strong a factor in development of the state's agricultural resources as it should have been. Like all land-grant colleges, it succumbed to the temptation to emphasize mechanic arts at the expense of agriculture. All forward-looking land-grant colleges have either reversed or are now reversing this policy. Dr. Patterson is very correctly urging that Maryland do the same thing with its college. He is undoubtedly right and his policy should have the loyal support of every farmer in the state. (2) The institution should be owned and controlled by the state. Founded in 1844 as a private corporation by public spirited citizens who acquired the property and erected the buildings by stock subscription, the title to the property is now vested in the stockholders and the state. Each owns a half interest in a property worth about $500,000. The state in the past made considerable appropriations to the college. It now holds an overdue mortgage of $15,000 against the stockholders' half interest. The institution is managed by a large and unwieldy board, composed of state officials acting as ex-officio members, state trustees, appointed by the Governor and the stockholder trustees. The burden of conducting the affairs of the college has very largely rested upon the shoulders of the stockholder trustees. This triplicate board lacks unity of purpose and unanimity of action. The destruction of the main college buildings by fire, brought the institution before the public. Its needs have been ably presented by Dr. H. J. Patterson, its President, and studied by a legislative committee appointed in 1912, as well as by the Country Life Commission and the City-Wide Congress, whose committee has recently held a number of conferences with other important city and state organizations. There is practical unanimity in the recommendations of these various bodies. The legislative committee of 1912 has presented its report to the legislature now in session, with three bills, providing: (1) For the taking over of the college by the state thru mortgage foreclosure proceedings; (2) granting the college a new charter, and (3) providing appropriations for rebuilding and maintenance as urged by Dr. Patterson. While certain amendments to these bills will probably be presented by the City-Wide Congress in conjunction with other organizations, there is practical agreement as to the main features of these bills. The most gratifying feature is the remarkable interest displayed by the leading civic organizations of Baltimore City in the rebuilding and reorganization of this institution. These organizations frankly admit and urge that the welfare and progress of the city is interdependent with the welfare and progress of the counties and agricultural interests of the state. The city representatives in the legislature appear minded to enact constructive and progressive legislation as needed by the college. The Governor of the state has the welfare of the college very much at heart. Under these circumstances it would be a calamity if the farmers of Maryland, for want of leadership or because of indifference to their own best interests, were to miss this unique opportunity to secure legislation thru united action on the part of city and country to promote the welfare of the state under direction of a new agricultural college. This is further emphasized by the fact that Baltimore City, which contains one-half of the population of Maryland, must in any event pay 70 percent of any appropriations made to the college. The State Grange has again and again urged this matter as well as the organization of a strong state board of agriculture. At its last meeting, it emphatically endorsed Dr. Patterson's plans for the college, whose trustees, by legislative enactment, were made a State Board of Agriculture without definition of their duties. Surely the farmers of Maryland ought to follow its lead in urging this matter upon the present legislature which adjourns early in April.

Organized Farm Labor

A recent issue of a popular magazine discusses the dangers of the extension of labor unions to include farm labor. The article points out the disastrous results to farmers of the enforcement of a uniform scale of wages, the eight-hour law, extra pay for overtime, etc., which are features of labor union control, and predicts that when these rules are enforced the farmer "will have a still harder time to make a fair return upon his investment." The writer might have gone further and predicted that with increased wages and decreased hours for laborers, the farmers would make no return upon investment, and would be compelled to curtail operations to do without hired labor. This result is so certain as to virtually preclude the invasion of the unions into the farm field. The union could not exist without members and there could be few farm laborers at the increased cost under a union scale. The writer makes the common error of classing farming with other lines of manufacture and industry. The manufacturer must keep his entire plant in operation in order to make return on investment. The farmer prefers to do so, but if conditions necessitate he can curtail operations to the capacity of his labor force, and if pressed he will certainly do so. Even now, without organization of farm labor, but with scarcity of proficient help, many farmers are limiting their work to labor capacity rather than acreage capacity. Should efforts be made to increase the demands on time and wages there will be further curtailment in operation and greatly increased and wide-spread concern in the production and cost of food products. Farming is an industry that could never operate under union regulations, and present conditions in farm labor make the prospect of organization a hopeless one.

Lime

A prominent agricultural authority in this state recently remarked that when one began to talk lime to the eastern farmers he had his hands full; that there was scarcely a question in farm practice in which there was such general and wide-spread interest. Since the publication of an article on "Lime and Soil Fertility" in our issue of February 7, we have had a very large number of queries on various phases of the purchase and the use of lime. The article on the first page of this issue by Prof. Voorhees is a discussion of the points most frequently asked about in the purchase of lime. This wide interest in this subject indicates two very healthy conditions: (1) That farmers are generally coming to recognize the need of lime in the maintenance and restoration of soil fertility, and (2) that the farmers are seeking information as to best and most economical forms of lime to purchase. The first is an indication of better agriculture and the second an indication of more intelligent buying. When a farmer buys seed wheat from his neighbor he is very apt to examine it carefully for weed seeds, cracked or light-weight grains and other impurities. He knows that the value of the wheat depends upon its freedom from impurities, and he accepts or rejects it and bases his price upon that condition. When it comes to the purchase of lime, however, the average farmer disregards this principle and buys upon trade name or upon the basis that lime is all lime. The article in this issue is intended to help those who would buy on this basis of quality as well as price.

STATE CAPITAL NEWS

State's Biggest Crop.—Reports compiled by the new bureau of statistics of the State Department of Agriculture on the production of hay, the State's most valuable crop, show an interesting variation in prices received for the three varieties of hay in different counties. The acreage in hay aggregates 3,141,000 from which in 1913 there was gathered a total crop of 4,146,000 tons, bringing in $61,775,000, a sum much in excess of that received for any other crop. Only one state exceeds Pennsylvania as a producer of hay and the immense sum paid for the Keystone State crop will probably surprise a good many people. The reports received show that every county in Pennsylvania raises clover and timothy hay, but that only 20 of the 67 raise alfalfa. Alfalfa brought an average of $17 per ton, the price ranging from $22 in Mifflin and Union counties to $14 in Dauphin, Tioga and Lackawanna. The average yield of alfalfa was 3 tons to the acre, half a dozen counties getting but 2 to the acre. Timothy hay brought an average price of $15 per ton, ranging from $10 in Crawford county to $19 in Cameron; Lancaster showing an average price of $15 and Huntingdon of $18. One and a half tons to the acre appeared to be the general average of production. On clover hay the prices ranged from $8 in Crawford to $18 in Cameron; Lancaster showing an average of $13. The average for the state was also $13. The production was about the same as that of timothy, one and a half tons. Judging from statements made in volunteer reports there will be a big acreage in hay again and State officials are encouraging the clearing of lands in sections which have been deforested or allowed to run down and the making of such properties into pasturage or preparing it for hay. The crop shows big values and there is a steady demand of which farms well located for transportation can take advantage.

Planting Trees.—The State Forestry department plans extensive planting of trees this year. To set out the 20,000,000 trees which Dr. J. T. Rothrock, the former chief of forestry, says Pennslyvania should put out, would cost about $140,000 to $145,000 per year, but it would be money well spent because of the conservation of water supply and the ultimate revenue from timber. When it is remembered that the income from the forest reserves of the state, now numbering over 1,000,000 acres goes into the state school fund this looks like good business. The school fund is to be allowed to accumulate against the day when Pennsylvania's great revenues from exploiting of the coal, oil, iron and stone and other natural resources are diminished. The fund is to be made up of estates which fall to the state and the income from forest lands, the whole being invested and the interest also invested. As the state raises millions of trees on its nurseries systematic replanting would seem like a matter to consider. The fact that over 100 applications have been made by people who want to take advantage of the auxiliary forest reserve law, by which the state will controll planting and cutting, receiving for benefit of county wherein reserve is located ten percent of the income from timber when cut, looks as tho business men saw something in conservation. It is to be hoped that the next legislature will allow an appropriation to be made for farm forestry which will be adequate.

Must Use Care.—The Public Service Commission has informed several railroad companies that their employees must use care in firing locomotives to avoid the showering of farm lands along railroads with cinders and sparks. A number of complaints have been made recently wherein it is charged that lands beside lines on which there is heavy freight traffic have been covered with cinders to the consequent detriment of the soil, to say nothing of danger from fires. It has also been suggested that it would be good business for railroads to exercise more supervision over the methods of firing engines because it would not only prevent damage to lands, but also result in checking of waste in reckless handling of fuel.

Must Post Rates.—In a short time notice is to be issued to all railroads, trolley lines, water, gas, electric and other companies, including toll roads and toll bridges that they must post their rates and file copies with the Public Service commission. Judging from complaints there is a lack of uniformity and the state plans to supervise. The state will also regulate use of meters of all kinds.

Snow Retards Demonstrations.—The heavy snows have held up the inauguration of a good bit of State demonstration work and it begins to look as tho the orchard demonstrators would be held back later than usual because of the prevailing snows and the bad road conditions which are sure to follow. Meanwhile they are actively corresponding with people in districts which can not be reached and are giving advice. The farm counsellors will start in April if the weather permits. Owing to the bad weather the division of farmers institutes has arranged for sessions to be held in counties where the regular sessions were prevented. The bee inspection work will not start for some weeks.

Snow Costs Money.—It is estimated at the Capitol that the cost of removing snow from main highways of the state system will run about $20,000, the statement being made that such work was demanded so that traffic could go on. The State has definitely refused to pay for clearing township highways, holding that such costs must be borne by the supervisors. This is the first time the question of cost of removing snow has arisen and it bids fair to be a vexing problem.

Rabies Prevalent.—Rabies is reported by State Live Stock Sanitary Board authorities to be prevalent to an unusual degree this winter, there being half a dozen quarantines in boroughs and adjoining districts. In some sections farmers have hunted down the dogs because of danger to cattle.

Fertilizer Inspection.—The division of fertilizer control is planning an inspection service this year that will be the most rigid of any to date and will start soon, the object being to get as many samples as possible in the season when purchases are being made by farmers. The state officials are planning to go as far back into the manufacture as the law will permit and to thoroly investigate complaints as to the constituents of some brands. During the winter a large amount of information has been gathered about the manner in which people have been victimized, the investigations being carried on in a number of places without any blowing of horns over it. This will be used to supplement the work this spring.

Heavy Loss In Game.—According to reports made by game wardens, this winter will show a heavy loss in game birds, especially quail, pheasants and wild turkeys, owing to the heavy snows which have prevented the birds from finding food. Probably thousands of quail will be destroyed and only a quick thaw will save many of those alive. The organized effort to feed the birds on the part of sportsmen's associations will probably be the means of preserving the birds in some sections, but in mountain districts, between the snows and large birds and animals, the chances are that but little hunting will be left.—Hamilton, Harrisburg, March 9.

NEW YORK LETTER

Testing Milk For Sediment.—Rochester, and possibly some other cities, has a system of testing milk for some of the grosser forms of evil that contaminate it by using the test for sediment. This dirt trap is simple and yet does the work. It consists of a cloth screen over the end of a metal container which holds a quart, and thru this screen the sample of milk is forced and of course if there is any sediment in it, it will be seen on the cloth. The local authorities have established a standard for the milk according to which the milk is considered clean, moderately dirty, dirty and excessively dirty. (Is not milk either clean or unclean and should it not be treated accordingly?) If a man brings only "moderately dirty" milk he is notified to improve it but if he brings "real dirty" milk he is told to keep it out of the city until he can do better. If he fails to regard this notice the officials send his shipments back tagged "condemned," and his name and the record goes into the "milk rogues' gallery" at the health bureau.

A Good Idea.—A bill has been introduced in the Assembly amending section 52 of the highway law providing that temporary obstructions on public highways, such as logs, trees, lumber, machinery and vehicles, must be removed within five days from notice or the town supervisor will have the right to remove them. The present law permits 30 days' notice. The bill also provides that all permanent obstructions such as telegraph and telephone poles and trolley poles and wires, shall be removed or reset within 30 day's notice or the town superintendent shall remove or reset them. Were the present law enforced it would improve appearances along many highways.

A Large Business.—According to recently printed reports the Borden's Condensed Milk company pays every year $215,000 on sanitary and veterinary inspection, uses 4,000 horses and 2,500 vehicles, employes 7,000 persons, operates 120 plants in 11 states, makes 300,000,000 cans of condensed milk yearly, uses the milk from 250,000 cows owned by 12,000 farmers and utilizes 581,395,350 quarts of milk every year.

Cauliflower Figures.—The next time you eat cauliflower reflect that the center of this industry is Riverhead, Long Island, N. Y., and then reflect again that the farmers of that vicinity sold over 400,000 packages last year at a net profit of $500,000. This is the report of the Long Island Cauliflower association made at its annual meeting. This association declared a dividend of 10 percent on a paid up capital of $6,000 and has a balance in its favor of over $25,000.

Active Farm Bureaus.—The Oneida County Farm Bureau, G. Wendell Bush, agriculturist in charge, has accomplished a good work the past year. Among its accomplishments was the organization of three cow testing associations with about 1,500 cows under test and the establishment of a reasonable price for lime. This, prior to the establishment of the Bureau, ranged from $4 to $7 per ton, but owing to the efforts of the Bureau the price was lowered to about $2.25 per ton in carload lots. The Bureau has also improved corn and potato seed by breeding and selecting and co-operative spraying for potato blight was undertaken in several fields; it has supplied exhibits of an educational nature, or assisted at three fairs in the county; secured about 25 farm hands for the farmers of the county thru the state department of agriculture; encouraged the growth of alfalfa where is does not grow naturally, and co-operated with the farmers in solving many problems of an individual nature. The Bureau has saved the farmers $2,000 in the cost of lime and made over $1,000 for two different farmers in the growing of apples. It cost about $3,000 to operate the Bureau during the 11 months prior to the report. The Onondaga county Farm Bureau has also interested itself in the improvement of the dairy herds. Last year it had 1,000 cows under test and this year it is proposed to increase the number by 2,500. This bureau is trying to establish a better standard of dent corn and about 75 acres will be devoted to tests and experiments for the up-breeding of a variety that may be taken as a standard for the county. This year more attention will be paid the co-operative work and to improving market conditions. These two Bureaus are reperesentative of the more than 20 now in active operation in the state and the work all are doing is most encouraging and efficient.—D.

MARYLAND NOTES

Local Option Agitation.—In the local option counties of the state, especially on the Eastern Shore, the people are now agitating the question of regulating the amount of how much each imbiber should be allowed to "import." It has been proposed by a member of the Eastern Shore Anti-Saloon League that the amount should be limited to one gallon a month. This, however, is in no sense prohibition, but a sort of individual license or regulation.

Farmers' Club Meets.—The Upper Cross Roads Farmers' Club recently met at the home of Mr. W. F. Scarff. The main discussion was on "Buying Seed Thru The Farmer's Produce Exchange." This plan was unanimously favored. The members have ordered several car loads of potatoes for seed from the North. It is concluded from experiments made at the Maryland Agricultural station that potatoes grown in Garrett Co., Md., are equal in every respect to those grown in any section.

Creamery A Success.—The Oakland creamery is thriving beyond all expectations, and the demand now for butter is greater than supply.

Rich Neck Club Meets.—At the last meeting of the Rich Neck Farmers' Club of Kent Co., a Produce Exchange was organized with W Irving Walker as president. The report of the treasurer of the Price Milk Cooling Station, recently started, showed that an average of $3,000 a month was being paid to farmers in the immediate territory. This is considered a pretty good showing for a section where heretofore little effort at dairy products had ever been made.

Tomato Growers' Protest.—Caroline County tomato growers are greatly incensed at the low price packers or canners are offering for the coming season's crop of tomatoes. So far no contracts have been signed. Not only are the canners offering less than last year by the ton, but are also talking of buying by the basket, instead of by the ton, and are to pay 12 cents per basket. Some farmers are talking of growing other crops, and if many should do this the canners would have something serious to thing about.

VALUABLE FREE CATALOGS

Bohon's "Blue Grass" Buggies.—Anyone contemplating the purchase of a buggy or harness this spring should investigate the factory-to-you offer made in the new catalog issued by the D. T. Bohon Co., 219 Main St., Harrodsburg, Ky The catalog is a beautifully printed and illustrated booklet of 150 pages. It shows and describes sigle buggies ranging in price from $46 to $100; double seated buggies from $50 to $120; spring wagons from $40 to $75; harness from $12 to $40 All goods are fully guaranteed and sold on a direct selling plan that will appeal to all purchasers. The catalog and full details will be sent free upon request to the above address.

Seeds and Implements.—The 1914 catalog of vegetables, grass and flower seeds issued by Ross Bros., 41 Front St., Worcester, Mass., is bigger, better and brighter than ever. It contains 120 pages descriptive of a full line of seeds for the farm, garden and lawn; also a line of farm and garden implements, including plows, harrows, drills, planters, weeders, cultivators, incubators, fencing, feed cookers, grinders, spray outfits, wagons, etc. This is one of the largest agricultural department stores in New England and has an established reputation for reliability and quality of goods. The catalog will be sent upon request to the above address.

Guaranteed Roofing.—Are you buying roofing or fencing this spring? If so, you will be interested in the new catalogues of the American Iron Roofing Co., Station 20, Middletown, O. These catalogs describe the famous ingot iron fencing and roofing. American ingot iron is guaranteed to be 99.84 percent pure, giving a lasting, rust resisting product that fills the need in both roofing and fencing. The catalogs are free upon request to the above address.

Sowing Fertilizers.—The problem of applying fertilizers in accurate quantities has long been an important one with farmers. The Stevens Broadcast Fertilizer Sower solves the problem. This implement will immediately appeal to farmers because of its strong construction and simplicity of operation. It has no springs or gears in the box, but will distribute any quantity desired, from 200 pounds up to 8 tons per acre. A new circular giving full description will be sent free to any reader writing to Belcher and Taylor Agricultural Tool Co., Box 20, Chicopee Falls, Mass.

If the average Farmer is as shrewd a merchant as he is said to be—and we *know* he is—the fact explains why so many Mitchell cars are in *daily use on the farm.*

It is because the Mitchell is a sturdy and lasting proposition and may be maintained with maximum economy that the farmer finds it suited to his needs. When he buys it he realizes that he has made an investment which *pays big dividends in efficiency.*

The car that does the most work, lasts the longest and can be kept up with the least expense for repairs, is *the car that the Business Farmer needs* and this we declare to be the Mitchell because years of experience have *proved* it definitely.

The purpose of this advertisement is to request you Business Farmers to go at once to the nearest Mitchell dealer, examine the car carefully, take a ride in it and *drive it yourself* so as to get the *personal feel* and the *personal touch.* If it proves its merit it is the car you want. That's the *only way* to *buy* an automobile and the only real way to *sell* one.

Equipment of All the Mitchell Models That is Included in the List Prices:

Electric self-starter and generator—electric lights—electric horn—electric magnetic exploring lamp—speedometer—Tungsten valves—mohair top and dust cover—Jiffy quick-action side curtains—quick-action rain vision wind-shield—demountable rims with one extra—double extra tire carriers—Bair bow holders license plate bracket—pump, jack and complete set of tools.

Prices F. O. B. Racine

Mitchell-Lewis Motor Co.
Racine, Wis. U.S.A.

Will Next Summer Be DRY?

You don't know—nobody knows. But if you take the precaution of deep tilling NOW, you will have as little to fear from drouth as had thousands of Spalding Deep Tilling Machine users who had plenty of moisture stored away in their Spalding seed-beds last summer. Find out what the *users* of Spalding Deep Tilling Machine report. Write us, or see your dealer. Dept. 2.
SPALDING TILLING MACHINE CO., CLEVELAND, OHIO.

CAN YOUR BOY DRIVE A TEAM?
Then turn your walking plow into a sulky with a
WINNER PLOW TRUCK
and let him plow while you do work too heavy for him. You get 10 Days in which to see whether it's worth the money. If you think it isn't, we return your money and pay all the freight. To buyers in new territory we make a Special Introductory Offer. Write today for this offer and our Free Book. Make your boy a full man.
Lewis Mfg. Co., Box P, Cortland, N. Y.

AGENTS CAN MAKE $5.00 TO $10.00 A DAY by selling my Safety Oil Lamp Burners and Lanterns. Write for free samples and particulars.
C. F. SIEBERT East Pittsburg, Pa.

DRESSED POULTRY & EGGS WANTED
also Fresh Killed broilers and squabs.
Full Prices and prompt returns.
ARTHUR H. BONSOR,
Reading Terminal Market, - Phila., Pa.

Ship Your Potatoes Now.
Nearly half of 1913 crop is yet in farmers' hands. Prices are good and we see no reason for high prices in the Spring. All inquiries promptly answered.
GIBBS & BRO., 325 North Front St., PHILADELPHIA.

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For information concerning the great agricultural advantages in New York State, and description of 1200 cheap dairy, fruit, and general farms, Address
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EGGS, Poultry, Butter Wanted
Top prices and quick returns guaranteed.
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FertileFarms and unimproved lands in Delaware diversified farming, live stock, delicious fruit and ideal homes. For information, address STATE BOARD OF AGRICULTURE, Dover, Delaware.

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FARMS ALL SIZES ALL PURPOSES LIST FREE
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EGG CASES, Slightly Used, For Sale.
FRED YOST & CO., Newark, N. J.

Live Stock

THE FOREIGN FAD

The adage, "Distance lends enchantment to the view" has many applications. The notion that things from a distance are better has been a most expensive one for the American people. It has had just enough of a basis in truth to give the notion dominance. The value of the introduction of the improved breeds of live stock from Europe into this country can never be estimated but it does not follow that this country is benefited by the continued importation of the same breeds.

If the improved breeds of foreign countries will not maintain their high degree of excellence in this country and transmit it to offspring they are not what we want. From the importance we attach to the fact that an animal is imported we seem to think that European countries continue to produce better individuals than we can in this country. I do not share this belief. I see no justification for the continual stream of money we are sending abroad for more individuals of breeds already well established in this country. But our fad for foreign things is not confined to live stock from across the sea. It extends to manufactured products and products of the soil. Merchants make capital of this fad and insist that many articles are imported as an argument for their superiority.

TWO VALUABLE FARM TEAMS

A few days ago I visited a Swiss cheese factory where a native Swiss was in charge. I bought some of the cheese at 18 cents a pound. A few days later I bought some of my grocer at 28 cents a pound. At my protest that the spring in price was too great he insisted that he was selling cheese made in Switzerland. English cloth and French styles attract us!

The delusion of distance is not confined to "across the sea;" it holds within our own continent. There is an enormous waste in transporting breeding stock, farm seeds and implements long distances. I would not be understood as discouraging the introduction of improved stock and seeds. There is opportunity for many men to improve their financial condition by introducing better stock and better farm crops. But the improved stock and seed they should have are just as apt to be in their own township as a hundred or a thousand miles away. The truth that a "Prophet is not without honor save in his own country" applies to the promoter of improvement in animal and plant life as well as in morals. Our attitude in this matter is a fallacy we ought to overcome.

What every man should do is to set about systematically improving by selection for breeding what he has. This applies to his animals and his crops. He may take a long step in advance by buying his foundation from a neighbor who started improvement some years in advance. Since not all men will select their own farm seeds there will always be an opening in every community for some one to produce good breeding stock and good farm seeds for their neighbors. The patronizing of such home industries is to be encouraged. It would be a great advantage to a community to settle upon some one breed of dairy or beef cattle, of hogs; one variety of corn, wheat and oats. The imagination that plays such a large part in child life in populating the woods and the dark lingers with us into mature years, and the Easterners who want to grow better corn send to Indiana for seed; the Hoosier sends to Illinois and the Sucker sends to Iowa. We send to Maine or Minnesota for potatoes, and to Canada for oats. This practice is not only wasteful on account of the cost of transportation but in many instances is wrong because acclimated plants do better than those transplanted from a different environment.—H. P. M.

OUTBREAK OF GLANDERS CHECKED

Something over a year ago a carload of 26 horses was shipped from a western state into Columbia County, Pa., for public sale. These horses then were all in an apparently healthy condition and thus were sold to various farmers and horsemen thruout that community. In a short time, however, several of these horses began to show syptoms of glanders, a dangerous infectious disease, thereby jeopardizing the health of hundreds of other horses in neighboring counties, as each horse in the car was undoubtedly a source of infection. Glanders is communicable to man and, as in horses, the disease is fatal.

Following the development of these cases, the agents of the State Livestock Sanitary Board began to make a thoro investigation. By the tracing of all animals in this shipment, by testing of these and in addition all exposed animals with mallein, an efficient dingnostic agent, and by an examination of blood samples collected from the horses and submitted to the Board's laboratory, nearly all of the 26, besides other horses, in all 33, were found to be infected with glanders. All diseased animals were destroyed and thoro disinfection was carried out in all stablos and on all premises where these animals were found and thus the horse owners of that community were relieved from any further loss.

Breeders Consignment Sale Company's
SEVENTEENTH PUBLIC SALE
Syracuse, N. Y. March 25-26, 1914
190 - - HOLSTEINS - - 190
Tuberculin Tested

The Breeders Consignment Sale Co. have always had the reputation of selling *good* cattle.

Sometimes they have been *better* than others.

This year the animals catalogued are in themselves a positive guarantee that it will be

THE BEST SALE EVER HELD

If you want to improve your herd you cannot afford to miss this sale.

Sale will be held in the New Sale Pavilion, Syracuse, N. Y., Stop 22, Liverpool Trolley Line.

Auctioneers—Kelley, Haeger & Mack.

For catalogue address,

LIVERPOOL SALE & PEDIGREE CO., SALE MANAGERS, **Liverpool, N. Y.**
Please mention PENNSYLVANIA FARMER.

Potato Profits

A certain loss in potatoes has been turned into a profit of $30 an acre by more and better cultivation. Keeps the soil mellow, retains the moisture and kills the weeds.

IRON AGE Riding Cultivators

Carry every possible adjustment of points, gangs, wheels and frame to care for any row crops in any soil and especially for potatoes.

All steel but pole and neckyoke. Built for wear and convenience.

See them at your dealers and write us for booklet on "Two-Horse Riding and Walking Cultivators."

Ask also for Iron Age Farm and Garden News.
BATEMAN M'F'G CO.
Box 1437
Grenloch, N. J.

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9c PER FOOT

Best Quality Copper—Extra Heavy Cable
A *better* conductor than required by Insurance Companies. System complete with full directions for installing. No agents. *You* get wholesale price.

Buy Direct—On Trial—Freight Prepaid
Pay after you are satisfied. Our Rods are securely protecting thousands of farm homes and will protect yours. Write postal for FREE book on lightning protection. Tells plainly just the facts you will be interested in. Ask for it today.

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"PURE SUGAR CANE"
FEEDING MOLASSES
1 to 4 Barrels, per gallon, - - 10 cents
5 to 10 Barrels, per gallon, - - 9 1-2 cents
Barrels contain about 58 gallons.
TERMS:—F. O.B Philadelphia. Cash with order.
W. E. WOODWARD CO.
252 N. Water St., PHILADELPHIA
Official Grange Grocery House

The School of Veterinary Medicine At The University of Pennsylvania trains students in all lines of veterinary work. Facilities unexcelled. For catalog, address, Louis A. Klein, Dean, Dept F., 39th St. & Woodland Ave., Phila., Pa.

SWINE

ELLENWOOD FARM BERKSHIRES

We are now offering for sale young pigs of both sexes. Unrelated trios and pairs for sale. Our pigs are rich in Masterpiece, Premier, and Lee, blood. Let us supply you with a good foundation herd.

Satisfaction guaranteed. Only the choice animals sold for breeders.

Write for prices, etc., or pay us a visit.

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Looking Over The Fence.

By THE COUNTRY PARSON.

Our School Problem

At the International Congress of School Hygiene, held at Buffalo, N. Y., last August, 2,000 physicians, scientists and educators from nearly every civilized country in the world came together to discuss the school question from the viewpoint of public health. This is unquestionably a most important matter, and it is eminently proper that it should be discussed by our doctors, who are more and more coming to realize that the preservation of health rather than the cure of disease is or should be their chief concern. That they should, therefore, begin with the child is but natural, for the foundation of most chronic diseases is laid in childhood. School house construction with an adequate and economical solution of its many problems will doubtless be studied by our architects. This raises what I believe to be a perfectly legitimate question: Is there any side of this ever-present problem which may with profit to the community be discussed by the church under leadership of its ministers?

I am not now thinking of morals. Since the church refuses and must refuse to recognize any system of morals which lacks a religious foundation, and since the teaching of religion, with wisdom and right, is excluded from the State's plan of public education, it is apparent that the church cannot urge the teaching of any system of morality thru our public schools. All it can ask is that nothing be taught contrary to the system of morals, whose inculcation it clieves to be its peculiar province and duty.

Is its attitude toward the great question of public education then to be purely negative? Is there no service its ministers may render akin to that of this Congress of School Hygiene? Or must we leave this matter of public education to the architect, the physician, the educator, and, let us add, to the politician? As being the man to whom we entrust tho management of public business, it finally comes back to the politician. All this talk about keeping our schools out of politics is arrant nonsense. We cannot keep them out, if we will. Nor is it desirable that we should. Politics or public policy has to do with the administration of public business. Whatever progress has been made toward its administration for the public good has been made by putting things into politics rather than taking them out.

I therefore have no patience with this idea that certain things must be kept out of politics and put into the hands of self-perpetuating boards. You may thereby secure greater temporary efficiency, but you are bound to lose public interest and get into a rut. This is as true of public education as it is of a municipal water supply, of an art gallery as of a university. It all comes back to the question: Can the people be trusted? There will always be two answers, just as there will always be classes of men, conservatives and progressives. It is perhaps well that there should be, for they counterbalance and compensate each other.

I need not say that my sympathies are with the people who are trying to go ahead rather than with the people who are trying to hold back. I, therefore, believe that the more things you put into politics the worse it will be for the selfseeking politician and the better for the people. I read that out of Guizot's "History of Civilization in Europe." I am, therefore not a bit sorry that the progressive cities of St. Louis and Detroit have put their art galleries into politics by making them municipal institutions.

The motto of every politician I have ever known (and I have known quite a number) is "Give the people what they want." Of course, we know that this laudable desire is not inspired by any sincere affection for the people. The politician aims to give the people what they want, because he well knows that he cannot long maintain himself in power if he openly defies public opinion, which is the one thing he really respects and fears. Over against that, he is a most arrant coward. It is, therefore, of supreme moment, especially in this all-important matter of public education, that the people should want the right thing and know what they want.

Education, which was once almost exclusively in the hands of the Church, has been largely taken over by the State. We have come to realize that the teaching of arithmatic and spelling is nowhere enjoined upon the Church, even as the teaching of Christian doctrine and morality is not the function of the State. This, however, cannot possibly mean that the Church is not concerned with public education. Its members are citizens of the State. Its children are pupils of the State's schools. While its direct efforts in their behalf are confined to the teaching of religion and morals, it cannot, without injury to them and itself forget that their so-called secular training is a matter of grave concern to both Church and State.

It would therefore appear that the organization and plan of study of our public schools are matters in which all citizens and especially those citizens who are members of the Church are most vitally interested. If our physicians, in order to mould and direct public opinion, can meet to discuss school hygiene; if our architects can meet to discuss school architecture, and render a public service by doing so, then I fail to see any sound reason why I should not meet with the Jewish Rabbi and the Catholic priest of my community to discuss public education—provided, of course, that we agree at the off-start to confine our discussion to public education as we understand it in this country. If we, thru such discussion find out what we want, our respective congregations will be apt to find out what they want and the community will very probably find out what it wants. The politician, I think, will then be in something of a hurry to find out what he wants.

That we want something is very apparant. We are told that the day of the little red school-house is past. There is a quite general feeling of dissatisfaction with our city schools. That the great majority of their pupils, who leave school before their fourteenth year, are most imperfectly prepared for their future vocation is admitted. That the whole plan of study should be arranged as if every one of the 20,000,000 children in our schools were going to high school and college—a goal reached by a comparatively small number, is felt to be a mistake.

Efforts are being made to introduce vocational training, which in our city schools usually means hemstitching for the girls and a little woodwork for the boys. In our rural schools it has hitherto meant the organization of corn clubs. These are no doubt very helpful things, but none of them are fundamental. They are merely attachments stuck on a poorly-designed machine. Vocational training (and all training should be vocational) means more. Would there then be anything amiss in our coming together to ask ourselves what we really want in the way of secular education for our children? Or must we leave that to our educational experts, who, when unsupported by intelligent public sentiment over against our politicians, are usually very helpless people?

GRANGE PUBLICITY

I want to express my admiration of the timely article in Pennsylvania Farmer of January 31, from the pen of John McSparran on "Publicity at the National Grange;" also your comments on the same in your editorial columns. These facts are news to the rank and file of the members of the grange and smack very much of machine politics. They strike at the very foundation of the principles and purposes of the order. I believe with Brother McSparran that the granges could do no better work for the good of the order than to present the facts to every member in the order. Why should we not know and have access to these proceedings? Turn on the light. No gang rule.—G. L. Goodhart, Center Co., Pa.

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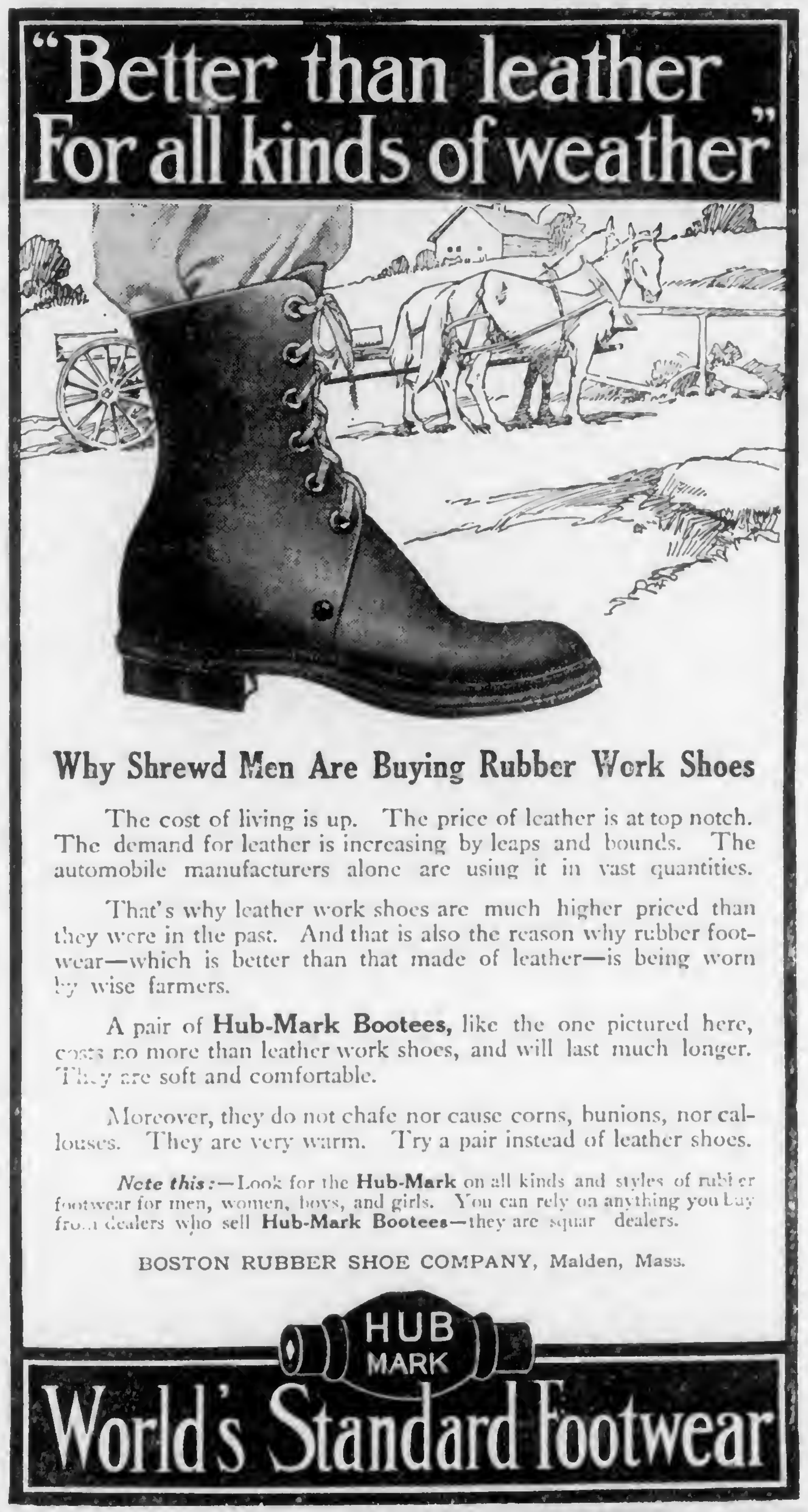

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Household

A SHAMROCK PARTY

Children love holidays, and their observance helps to make the home-life happy. While St. Patrick's Day may not inspire the same amount of interest as many other holidays, it offers possibilities that may make it an occasion of rejoicing to the little folks, especially those who have birthday anniversaries around about this date. The majority of country mothers are too busy to spend much time on frivolities, but while making their children happy in some simple form of home amusement, the mothers may really get relaxation themselves.

A shamrock party will afford both the children and grown-ups no end of pleasure, and it is not difficult to plan for. First of all, banish dishes if you would make the party a pleasure rather than a burden. For substitutes purchase as many white paperoid plates as will be required, allowing a few extra ones for the food. These are usually about ten cents a dozen. Paper napkins with a shamrock or some other St. Patrick's Day emblem may be bought for five cents a hundred. Add to this expenditure a few cents for some bright green "pin wheel" paper, and three sheets of bright green tissue paper.

SHAMROCK CHEESE FOR SHAMROCK PARTY DINNER.

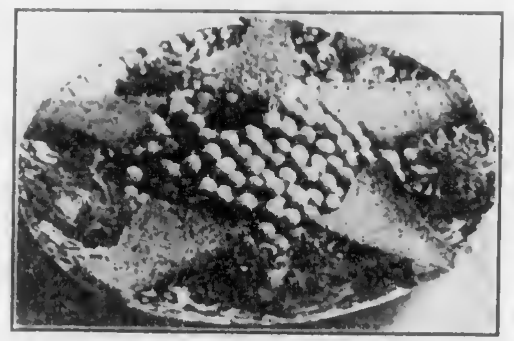
Cut two shamrock patterns from cardboard, making one 1½ inches, and the other ⅝ inch in diameter. Upon the back of the green paper outline the shamrocks, afterwards going over the same with a coat of mucilage. When dry the shamrocks are easily cut out and moistened into place. A large one may be pasted in the center of each napkin, if plain white napkins have been bought.

Lay the table or tables with white centerpieces over green paper, the latter cut out to fit the scalloped edges of the centerpiece. This color scheme is not obtrusive, and yet will give a hint of the accepted color scheme of green. A fern or some green plant on the centerpiece should furnish the main decoration. This should set on a plate covered with green tissue paper; the base may be surrounded with bunches of fruit and sprays of fresh parsley. Low bowls of pussy-willows, the latter of emerald hue in their new spring robes, will be just the thing for further ornamenting the table.

The little girl who assists in serving should wear a white frock with a green sash. An original feature may be a son of the Emerald Isle, his dark trousers banded with a stripe of green tissue paper. A sprig of green parsley in his tall hat will give it a jaunty air. This son of Erin may pass the Blarney stone to the guests for its customary kissing. Any stone of the cobble variety will serve for this purpose, but it should have a shamrock pasted on it, and should be carried on a green sateen or tissue paper pillow while conjuring the guests to perform the rite of kissing it.

The Refreshments

Shamrock Cheese.—Plain bread and butter sandwiches, cut as thin as the wafer, may be made altogether delectable if shamrock cheese (see illustration) is served with them. To make, mix with a bowlful of cottage cheese 1 teacupful of peacan or English walnuts chopped fine either in a bowl or run thru a meat chopper. Moisten with cream or a good mayonnaise, and season with salt and pepper, then set away in a cool place until it hardens. Decorate the top with pecan nuts laid in the shape of shamrocks, using a bit of water cress or parsley for the stems. Set the cheese on a paperoid plate, and garnish with cress or parsley.



PEAS a la ERIN, WITH "HARPS" OF TOAST.

Another pretty idea is to fill green peppers with the cheese, packing the pepper shells tightly. Set away for over night, if possible. When ready to serve, slice rather thin, leaving a rim of the green pepper around the cheese. Decorate each slice with three pecan nuts exactly as for shamrock cheese. One slice laid on each individual paperoid plate will be most attractive, as well as palatable, as the acrid tang of the pepper will give an appetizing flavor to the cheese.

Peas a la Erin.—If peas are to be served, they should be poured from the can into a strainer, after which pour over them 2 quarts of cold water. Drain and let stand exposed to the cold air 15 minutes. Melt 2½ tablespoonfuls of butter, add 1 tablespoonful of onion juice, and stir until yellow. Then add 1 tablespoonful of water and the drained peas. Cook until the peas are thoroly heated, and season with salt and pepper. Heap on the paperoid serving dish with toast harps (see illustration) as a decoration, and with parsley for a garnish. A little "nosegay" of parsley in the center of the mound will give a festive touch.

"BUTTERCUPS." ANGEL CAKE MOLDED IN SPOONS.

For dessert, nothing will be daintier or easier to make than "Buttercups". Mold very thin slices of angel cake in the bowls of dessert spoons, carefully trimming off the edges, cover with thin icing tinted yellow with the yolk of an egg. When the frosting has set, remove the cakes from the spoons and place the petals in the form of buttercups. Fill the center with coarse granulated sugar, tinted with a harmless green vegetable coloring. Serve the buttercups on individual plates.

One of the prettiest ideas I have ever seen at a St. Patrick's Day party was a candleboard. The latter was a circular board about eighteen inches in diameter. Candle holders were set all around the board in two tiers, leaving a place in the center for the cake—an angel food decorated with pecan nuts the same as on the Shamrock Cheese. A sprig of green myrtle garnished the cake. The candles were green.

Any one can make such a board, and it may be stained mahogany, oak or to match the dining room furniture. Candle holders may be purchased for a few cents. They are made of a cheap metal, perhaps tin, but when they are stained with lamp-black or gilded they are quite attractive. Many prefer the original color and use no stain. They are easily fastened into position on the board exactly as thumb tacks are used. Such a candleboard will serve not only for the St. Patrick Day festivities but for Christmas, birthday and wedding anniversaries, to say nothing of innumerable family occasions.

Candied orange peel makes a delicious aftermath. To make, cut peeling in quarters from the orange. Boil in clear water until the pulp is soft enough to pierce with a fork. Scrape off the white part without breaking the peel. Boil 1 cup of sugar and 1 of water until the syrup hardens in cold water, and the skin is clear. Drain dry and roll in sugar. Cut in thin strips with scissors. This bon-bon will be cheaper and by far more wholesome than the average candy.—Louise E. Dew.

EASILY MADE APPLE BUTTER

Apple butter is enjoying a great wave of popularity in our home this season. For many years I thought this appetizing "spread" must be made in large quantities in a kettle of great circumference; that the outside air, gypsy fire and huge wooden stirrer were absolutely necessary to produce its delicious flavor. But it came to be quite a burden to peel those quantities of apples, and there were sighs at not only going thru this heavy work of making apple butter but of eating it, so this part of the routine fall work was dropped. After a time we sold the kettle, feeling that its usefulness to us was passed.

It was last September that our boy, Robert, fresh from a neighbor's where he had caught a whiff of the spicy fragrance of apple butter, asked me to buy some. When I asked my neighbor to sell me a gallon of her newly made "ma'malade," she said I could have it for $1 a gallon. This being a higher price than I wished to pay, I determined to make a gallon myself.

My kettle was gone, and so was my ambition for twenty gallons, but surely there was no excellent reason for not making a smaller quantity in my preserving kettle. I peeled one peck of apples, cut them into rather small pieces, put then in a kettle with about 2 pints of water, put on the kettle lid and set them on the back part of a hot stove. At intervals I stirred the contents of the kettle vigorously, never letting them stick or scorch; it is quite unnecessary to stir all the time. (Cooking the butter in a glazed crock in the oven eliminates the necessity of stirring to prevent burning.—Editor.) When the fruit was tender and cooked, I used a potato masher to reduce it to a smooth pulp, then added 1 slightly rounded teaspoonful of cloves, 3 level teaspoonfuls of cinnamon, and 2 pounds granulated sugar. Then I cooked the mixture for three hours after the spices and sugar went in.

I packed the butter in two stone crocks for immediate use, having obtained about six quarts from one peck of apples, at an outlay of less than fifteen cents, which is surely more economical than paying $1 per gallon!

Should you desire to keep your apple butter for some time, seal it in air tight glass cans as you would canned fruit or preserves. But our quantity proved so delicious that very soon we "ate it all up."

It is such a speck of trouble to make that now every time we are seized with a desire for apple butter, we make a few quarts, often using thus the speckled apples picked from the fruit stored for winter. And it is such a saving of our preserves and jellies!

City folks have tremendous appetite for this farm product, and women could turn a good many apples into money by supplying this appetite.—Charlotte Marshall, Baltimore Co., Md.

IMPROVEMENTS IN KEROSENE LIGHTING

In artificial lighting there are two important factors to consider: (1) The cost per unit of light, and (2) the efficiency of the light. The old style kerosene lamp is the most inefficient, in that its yellow light is very far from daylight.

Up to a few years ago it was not considered possible to burn kerosene except in a wick lamp. And other forms of fuel were advocated which could be burned with the so-called incandescent mantle because by means of this mantle a light much more closely resembling diffused daylight could be obtained. With the introduction of the mantle lamp for kerosene, however, artificial lighting in the farm home can be made very efficient as the character of the light depends not on the fuel but on the character of the mantle which is used. The kerosene mantle lamp requires somewhat more care than the ordinary lamp. The mantles are fragile and tend to blacken if the wick is not kept properly trimmed. Portable mantle lamps have also been devised for the use of other fuels.

With the introduction of denatured alcohol a fairly cheap fuel for lighting has been made available. Alcohol is in some respects more desirable than kerosene in that there is less danger of fire because alcohol can be extinguished with water; there is less tendency to blackening of mantles; and possibly most desirable of all, the disagreeable odor of burning kerosene is done away with. At present, however, even denatured alcohol is much more costly than kerosene, and unless these secondary considerations just mentioned outweigh the difference in cost, kerosene should be used. The mantle lamps are more costly than the ordinary kerosene lamp, ranging up from $3.00, while the ordinary lamp can be bought for from 50 cents to $1.00. The character of the light from the two styles of lamps, however, can not be compared and where any amount of close work, such as reading or writing or sewing, is to be done by artificial light the light which is least harmful to the eyesight should receive first consideration.—R. M. West, Assistant Agricultural Chemist, University Farm, St. Paul.

AN ENGLISH WOMAN AND HER CHICKENS

One of the great drawing cards of the fifth annual show of the Maryland Poultry and Pigeon Association in Baltimore, was Miss Carey of England and her string of 40 birds. As I entered the Fifth Regiment Armory and began to look at the 4,000 picked birds exhibited there the first thing I heard was "I want to see the English woman and her chickens." This was from a fine, elderly woman who, if one may judge from appearances, did not know much about chickens except as she saw them in market. Then two young men stopped at a pen of White Orpingtons to which a blue ribbon was attached, saying "These are all right but I want to see the English Miss Carey and her Orpingtons." So I decided I'd better see Miss Carey and her exhibition birds myself. And I was not disappointed. Miss Carey, Buff and White Orpington specialist, and originator of the White Faverolle, proved to be an agreeable and interesting young woman. She was modest and unassuming and her head did not seem to be at all turned by the fact that her birds—cocks, cockerels and hens—have won first prizes in all the great poultry shows in England, the United States and South Africa, and that, too, after being in the business just seven years.

From experience I know that women can raise poultry successfully, but I was naturally interested to know why Miss Carey, a slender little woman of 28 or 30 years, apparently, should take up a business that requires both time and strength to carry on successfully. In reply to my query, Miss Carey said "It was just this way. I had been brought up without any special training for self-support, then all at once the money was gone and I had to do something to earn some more. I did not want to be a clerk or work in an office, so I decided to work for myself, and as I knew more about chickens than anything else I decided to raise chickens for breeding and exhibition. That is how I became an Orpington specialist. Then I began to breed the White Faverolles because I like to have something new to interest me. The Faverolles are such favorites in France both for table and egg-laying qualities that I became interested in introducing them in England, but they are so ugly being dull and dingy looking, that I knew they would not be popular in England and America, so I began to try to produce a white type, and you see the result."

And Miss Carey pointed to her pen. They certainly were fine specimens, much like the Orpingtons except that they have fluffy tufts of feathers beside their eyes and feathers on their legs like Cochins. Her Orpingtons were larger than any I have seen exhibited anywhere. When I commented on that and suggested that it was due perhaps to climatic conditions Miss Carey replied that in her opinion it was a question of care rather than of climate. She said that when the weather was bad, wet and cold, she kept her chickens in and let them take their exercise in the scratching pens. By giving them proper food and attention she could produce immense birds.—Mrs. Nevada Davis Hitchcock.

Cement To Mend China.—Take a very thick solution of gum arabic, and stir into it plaster of Paris until the mixture is of the proper consistency. Apply it with a brush to the broken edges of the chinaware and stick them together. In a few days it will be impossible to break the article in the same place. The whiteness of the cement makes it doubly desirable.

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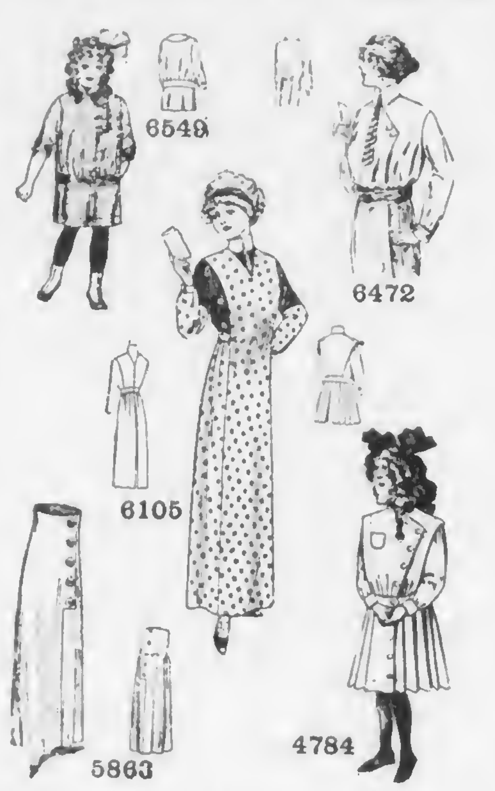

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXIV (continued)

Then Maud Barrington, sitting where all could see her, signed imperiously to Alfreton, who was on his feet next moment, with Macdonald and more of the men following him.

"I," he said, with a little ring in his voice and a flush in his young face, "owe him everything, and I'm not the only one. This, it seems to me, is the time to acknowledge it."

Barrington checked him with a gesture. "Sit down all of you. Painful and embarrassing as it is, now we have gone so far, this affair must be elucidated. It would be better if you told us more."

Winston drew back a chair, and when Courthorne moved, the man who sat next to him laid a grasp on his arm. "You will oblige me by not making any remarks just now," he said dryly. "When Colonel Barrington wants to hear anything from you he will ask you."

"There is little more," said Winston. "I could see no hope in the old country, and came out to this one with one hundred pounds a distant connection lent me. That sum will not go very far anywhere, as I found when, after working for other men, I bought stock and took up Government land. To hear how I tried to do three men's work for six weary years, and at times went for months together half-fed, might not interest you, tho it has its bearing on what came after. The seasons were against me, and I had not the dollars to tide me over the time of drought and blizzard until a good one came. Still, tho my stock died, and I could scarcely haul in the little wheat the frost and hail left me, with my worn-out team, I held on, feeling that I could achieve prosperity if I once had the chances of other men."

He stopped a moment, and Macdonald poured out a glass of wine and passed it across to him in a fashion that made the significance of what he did evident.

"We know what kind of a struggle you made by what we have seen at Silverdale," he said.

Winston put the glass aside, and turned once more to Colonel Barrington.

"Still," he said, "until Courthorne crossed my path, I had done no wrong, and I was in dire need of the money that tempted me to take his offer. He made a bargain with me that I should ride his horse and personate him, that the police troopers might leave him unsuspected to lead his comrades running whisky, while they followed me. I kept my part of the bargain, and it cost me what I fancy I can never recover, unless the trial I shall shortly face will take the stain from me. While I passed for him your lawyer found me, and I had no choice between being condemned as a criminal for what Courthourne had in the meanwhile done, or continuing the deception. He had, as soon as I had left him, taken my horse and garments, so that if seen by the police they would charge me. I could not take your money, but, tho Courthorne was apparently drowned, I did wrong when I came to Silverdale. For a time the opportunities dazzled me; ambition drew me on, and I knew what I could do."

He stopped again, and once more there was a soft rustle of dresses, and a murmur, as those who listened gave inarticulate expression to their feelings. Moving a little, he looked steadily at Maud Barrington and her aunt, who sat close together.

"Then," he said, very slowly, "it was borne in upon me that I could not persist in deceiving you. Courthorne, I fancied, could not return to trouble me, but the confidence that little by little you placed in me rendered it out of the question. Still, I saw that I could save some at least at Silverdale from drifting to disaster and there was work for me here which would go a little way in reparation, and now that it is done I was about to bid you good-by, and ask you not to think too hardly of me."

There was a moment's intense silence until once more Dane rose up, and pointed to Courthorne sitting with half closed eyes, dusty, partly dazed by indulgence, and with the stamp of dissolute living on him, in his chair. Then he glanced at Winston's bronzed face, which showed quietly resolute at the bottom of the table.

"Whatever we would spare you and ourselves, sir we must face the truth," he said. "Which of these men was needed at Silverdale?"

Again the murmurs rose up, but Winston sat silent, his pulses throbbing with a curious exultation. He had seen the color creep into Maud Barrington's face, and her aunt's eyes, when he told her what had prompted him to leave Silverdale, and knew they understood him. Then, in the stillness that followed, the drumming of hoofs rose from the prairie. It grew louder, and when another sound became audible too, more than one of those who listened recognized the jingle of accoutrements. Courthorne rose unsteadily, and made for the door.

"I think," he said with a curious laugh, "I must be going. I don't know whether the troopers want me or your comrade."

A lad sprang to his feet, and as he ran to the door called "Stop him!"

In another moment Dane had caught his arm, and his voice rang thru the confusion as everybody turned or rose.

"Keep back all of you," he said. "Let him go!"

Courthorne was outside by this time, and only those who reached the door before Dane closed it heard a faint beat of hoofs as somebody rode quietly away beneath the bluff, while as the rest clustered together, wondering, a minute or two later, Corporal Payne, flecked with spume and covered with dust, came in. He raised his hand in salutation to Colonel Barrington, who sat very grim in face in his chair at the head of the table.

"I'm sorry, sir, but it's my duty to apprehend Lance Courthorne," he said.

"You have a warrant?" asked Barrington.

"Yes, sir," said the corporal.

There was intense silence for a moment. Then the Colonel's voice broke thru it very quietly.

"He is not here," he said.

Payne made a little depreciatory gesture. "We know he came here. It is my duty to warn you that proceedings will be taken against any one concealing or harboring him."

Barrington rose very stiffly, with a little gray tinge in his face, but words seemed to fail him, and Dane laid hand on the corporal's shoulder.

"Then," he said grimly, "don't exceed it. If you believe he's here, we will give you every opportunity of finding him."

Payne called to a comrade outside, who was, as it happened, new to the force, and they spent at least ten minutes questioning the servants and going up and down the house. Then as they glanced into the general's room again, the trooper looked deprecatingly at his officer.

"I fancied I heard somebody riding by the bluff just before we reached the house," he said.

Payne wheeled round with a flash in his eyes. "Then you have lost us our man. Out with you, and tell Jackson to try the bluff for a trail."

They had gone in another moment, and Winston still sat at the foot of the table and Barrington at the head, while the rest of the company were scattered, some wonderingly silent, tho others talked in whispers, about the room. As yet they felt only consternation and astonishment.

CHAPTER XXV

Courthorne Makes Reparation

The silence in the big room had grown oppressive, when Barrington raised his head and sat stiffly upright.

"What has happened has been a blow to me, and I am afraid I am scarcely equal to entertaining you tonight," he said. "I should, however, like Dane and Macdonald, and one or two of the older men to stay a while. There is still, I fancy, a good deal for us to do."

The others turned towards the door, but as they passed Winston, Miss Barrington turned and touched his shoulder. The man, looking up suddenly, saw her and her niece standing close beside her.

"Madam," he said hoarsely, tho it was Maud Barrington he glanced at, "the comedy is over. Well, I promised you an explanation, and now you have it you will try not to think too bitterly of me. I cannot ask you to forgive me."

The little white-haired lady pointed to the ears of wheat which stood gleaming ruddy bronze in front of him.

"That," she said, very quietly, "will make it easier."

Maud Barrington said nothing, but every one in the room saw her standing a moment beside the man, with a little flush on her face and no blame in her eyes. Then she passed on, but as it was the pause had been very significant, for it seemed that whatever the elders of the community might decide, the women, whose influence was supreme at Silverdale, had given the impostor absolution.

The girl could not analyze her feelings, but thru them all a vague relief was uppermost, for whatever he had been it was evident the man had done one wrong only, and daringly, and that was a good deal easier to forgive than several incidents in Courthorne's past would have been. Then she was conscious that Miss Barrington's eyes were upon her.

"Aunt," she said, with a little tremor in her voice, "it is almost bewildering. Still, one seemed to feel that what that man has done could never have been the work of Lance Courthorne."

Miss Barrington made no answer, but her face was very grave, and just then those nearest it drew back a little from the door. A trooper stood outside it, his carbine glinting in the light, and another was silhouetted against the sky, sitting motionless in his saddle further back on the prairie.

"The police are still here," said somebody.

One by one they passed out under the trooper's gaze, but there was the usual delay in harnessing and saddling, and the first vehicle had scarcely rolled away, when again the beat of hoofs and the jingle of steel came portentously out of the silence. Maud Barrington shivered a little as she heard it.

In the meanwhile, the few who remained had seated themselves about Colonel Barrington. When there was quietness again, he glanced at Winston, who still sat at the foot of the table.

"Have you anything more to tell us?" he asked. "These gentlemen are here to advise me if necessary."

"Yes," said Winston quietly. "I shall probably leave Silverdale before morning and have now to hand you a statement of my agreement with Courthorne and the result of my farming here, drawn up by a Winnipeg accountant. Here is also a document in which I have taken the liberty of making you and Dane my assigns. You will, as authorized by it, pay to Courthorne the sum due to him, and with your consent, which you have power to withhold, I purpose taking one thousand dollars only of the balance that remains to me. I have it here now, and in the meanwhile surrender it to you. Of the rest, you will make whatever use that appears desirable for the general benefit of Silverdale. Courthorne has absolutely no claim upon it."

He laid a wallet on the table, and Dane glanced at Colonel Barrington, who nodded when he returned it unopened.

"We will pass it without counting You accept the charge, sir?" he said.

"Yes," said Barrington gravely. "It seems it is forced on me. Well, we will glance thru the statement."

For at least ten minutes nobody spoke, and then Dane said, "There are prairie farmers who would consider what he is leaving behind him a competence."

"If this agreement, which was apparently verbal, is confirmed by Courthorne, the entire sum rightfully belongs to the man he made his tenant," said Barrington, and Macdonald smiled gravely as he glanced at Winston.

"I think we can accept the statement that it was made without question, sir," he said.

Winston shook his head. "I claim one thousand dollars as the fee of my services, and they should be worth that much, but I will take no more."

"Are we not progressing a little too rapidly, sir?" said Dane. "It seems to me we have yet to decide whether it is necessary that the man who has done so much for us should leave Silverdale."

Winston smiled a trifle grimly. "I think," he said, "that question will very shortly be answered for you."

Macdonald held his hand up, and a rapid thud of hoofs came faintly thru the silence.

"Troopers! They are coming here," he said.

"Yes," said Winston. "I fancy they will relieve you from any further difficulty."

Dane strode to one of the windows, and glanced at Colonel Barrington as he pulled back the catch. Winston, however, shook his head, and a little flush crept into Dane's bronzed face.

"Sorry. Of course you are right," he said. "It will be better that they should acquit you."

No one moved for a few more minutes, and then with a trooper behind him Sergeant Stimson came in, and laid his hand on Winston's shoulder.

"I have a warrant for your apprehension, farmer Winston," he said. "You probably know the charge against you."

"Yes," said Winston simply. "I hope to refute it. I will come with you."

He went out, and Barrington stared at the men about him. "I did not catch the name before. That was the man who shot the police trooper in Alberta!"

"No, sir," said Dane, very quietly. "Nothing would induce me to believe it of him!"

Barrington looked at him in bewilderment. "But he must have done—unless," he said, and ended with a little gasp. "Good Lord! There was the faint resemblance, and they changed horses—it is horrible."

Dane's eyes were very compassionate as he laid his hand gently on his leader's shoulder.

"Sir," he said, "you have our sympathy, and I am sorry that to offer it is all we can do. Now, I think we have stayed too long already."

They went out, and left Colonel Barrington sitting alone with a gray face at the head of the table.

It was a minute or two later when Winston swung himself into the saddle at the door of the Grange. All the vehicles had not left as yet, and there was a little murmur of sympathy when the troopers closed in about him. Still, before they rode away one of the men wheeled his horse aside, and Winston saw Maud Barrington standing bareheaded by his stirrup. The moonlight showed that her face was impassive but curiously pale.

"We could not let you go without a word, and you will come back to us with your innocence made clear," she said.

Her voice had a little ring in it that carried far, and her companions heard her. What Winston said they could not hear, and he did not remember it, but he swung his hat off, and those who saw the girl at his stirrup recognized with confusion that she alone had proclaimed her faith, while they had stood aside from him. Then the Sergeant raised his hand and the troopers rode forward with their prisoner.

In the meawhile, Courthorne was pressing south for the American frontier, and daylight was just creeping across the prairie when the pursuers, who had found his trail and the ranch he obtained a fresh horse at, had sight of him. There were three of them, riding wearily, grimed with dust, when a lonely mounted figure showed of a moment on the crest of a rise. In another minute it dipped into a hollow, and Corporal Payne smiled grimly.

"I think we have him now. The creek can't be far away, and he's west of the bridge," he said. "While we try to head him off you'll follow behind him, Hilton."

One trooper sent the spurs in, and, while the others swung off, rode straight on. Courthorne was at least a mile from them, but they were nearer the bridge, and Payne surmised that his jaded horse would fail him if he essayed to ford the creek and climb the farther side of the deep ravine it flowed thru. They saw nothing of him when they swept across the rise, for here and there a grove of willows stretched out across the prairie from the sinuous band of trees in front of them. These marked the river hollow, and Payne, knowing that the chase might be ended in a few more minutes, did not spare the spur. He also remembered, as he tightened his grip on the bridle, the white face of Trooper Shannon flecked with the drifting snow.

(To be continued)

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Flour.—For 196 lbs. in wood, winter-clear, $3.85@4.10; do straight, $4.35@4.50; favorite brands, $5.00@5.25; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17¾c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos. 5 to 12 and up, $1.55@2.75; do green, 14@15c.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅜@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs, 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions 15c ½-pk. Peppers, 3 for 10c. Eggplants 10@25c apiece. Cabbage, 5@10c a hd. Lettuce 2 to 3 hds for 25c. Beets new 10c bch. Sweet potatoes 30c ½-pk. White potatoes, 25c ½-pk. String beans 15c quart. Tomatoes, hothouse, 25c quart. Cucumbers 5@15c apiece. Celery 10c stalk. Squash 5@10c apiece; cauliflower 15@25c apiece; mushrooms, 35c lb.

Fruit.—Grapes 30c lb. Apples 15@25c ¼-pk. Pineapples 15@25c apiece. Cranberries 25c quart; lemons 15c doz; grapefruit, 2 and 3 for 25c; Oranges, 25@40c doz.

YORK PRODUCE MARKET

York, Pa., March 9, 1914.

Eggs advanced several cents during the week. All vegetables are tending higher.

Eggs.—28@30c.

Butter.—Country, 32@35c; separator, 35@38c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Scarce. Hens 15@16c. Dressed poultry, 50@90c each.

Vegetables.—Potatoes 10@16c ½-pk; 75c@$1.00 bu; cabbage 3@12c each; lettuce, 5@10c; beets, 5c bch; radishes, 5c bch; onions 5c bch., 15@18c per ½-pk; lima beans 14@16c qt; sweet potatoes, 12@15c per ½-pk; lard 14@16c lb; celery, 8@12c; peppers, 8@12c doz; turnips 10c per ½-pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 22@25c qt.

Fruit.—Apples, 20@35c ½-pk; pears, 15@25c per ½-pk; chestnuts, 10@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.07 bu., corn, 82c; oats, 55c; rye, 77c; bran, $1.50 cwt; middlings, $1.60 cwt.

Wholesale Grain Market.—Wheat, 97c, corn, 69c; oats, 45c; rye, 67c.

WILMINGTON PRODUCE

Wilmington, Del., Mar. 9, 1914

Butter.—Print butter, 38@45c lb. Creamery roll, 35@45c

Poultry.—Chickens, dressed 18@25c, ducks, 18@20c.

Eggs.—35@40c doz.

Vegetables.—Potatoes 50@60c bas. Cabbage, new 4c up. Sweet potatoes 45@50c bas. Onions, 10@12c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets, 5@8c bch. Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼-pk. Pinapples, 20@25c apc. Grapes, 10@15c lb; 20@25c bas. Oranges, California, 25@30c doz. Florida, 35@50c doz. Bananas, 10@15c doz. Pears 10@15c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼ pk. Grape fruit 7@10c each.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Mar. 9, 1914.

Beef Cattle.—Conditions were of an unsatisfactory character. The recent storms kept supplies back and in consequence current offerings were light, mostly of western brands of cattle. Trade was by no means active, tho for all choice steers, values closed steady. Very little trade in cows and calves went at concessions.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,743	9,864	5,418
Previous week	3,009	9,885	5,900

Best steers	$8.90@9.00
Choice steers	8.60@8.80
Good	8.40@8.50
Medium steers	8.00@8.25
Common steers	7.50@7.80
Bulls	5.25@6.85
Fat cows	6.20@7.00
Medium cows	4.75@5.75
Thin cows	3.50@4.50

Veal calves steady.

Best calves	$11.00@11.50
Good to choice do	10.50@11.00
Medium	7.50@8.00
Common do	6.50@7.00

Sheep and Lambs.—The market was at a standstill and very disappointing. In some instances prices were barely steady.

Choice wethers	$6.00@6.25
Good do.	5.25@6.00
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.25@8.50
Good to choice do	8.00@8.25
Common to medium	6.00@8.00

Hogs.—Trading was moderate, with the former rate limit predominating. Western as to size and quality $12.50@12.75.

City Dressed Stock.—All choice and prime meats of every variety closed firm under normal inquiry. Steers, 12@14c; heifers, 10½@13c; cows, 9@11c. Veal calves, 14@15c; country dressed calves, 14@15c; extra do., 15½c. Sheep,, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 9, 1914.

Cattle.—With a supply of 115 loads compared with a light supply of 85 the week before the market ruled slow and generally 15 to 20 cents per cwt. lower. The largest supply of light to medium weight cattle was on sale here that we have had for quite a while. Best heifers in light supply and sold about steady while the plain and medium grades were only steady. Cows in fair supply and sold about steady on all grades. Bulls fair supply and market about steady. Best fresh cows steady with springers slow sale. Supplies this morning totalled 110 cows. Best fat grades were steady to slow while others were easier.

Good to choice	$8.75@9.00
Good 1,300-1,400 lb	8.40@8.65
Medium to good 1,200-1,300 lb	8.10@8.30
Tidy 1,050-1,150 lb.	8.10@8.35
Fair to medium, 900-1,100 lb	7.40@7.90
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common to good fat oxen	4.00@6.50
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.25@6.50
Heifers	5.50@8.00
Fresh cows and springers	25.00@90.00

Calves.—Veal calves in fair supply and prices ruled lower, the close being $1 per cwt. lower than Monday's prices. Some 600 head were on sale. The market was steady.

Heavy and thin calves	$5.00@7.00
Veal calves	8.00@11.50

Sheep and Lambs.—The supply of sheep and lambs has been fair, and with only a fair demand the market ruled slow and lower, the close on sheep and lambs being 25 cents per cwt. lower. The demand today for sheep was fair. Choice lambs were higher while other grades of sheep and lambs were steady.

Prime wethers	$6.10@6.25
Good mixed	5.75@6.00
Fair mixed ewes and wethers	5.00@5.50
Culls to common	3.00@4.50
Spring lambs	5.00@8.00

Hogs.—The supply of hogs during the week has been light and with only a fair demand, owing to the easier prices at western points, the market ruled slow and the close was about 10 cents per cwt. lower than Monday's prices. Pigs very hard sale at low prices. Forty double-deck loads were on sale this morning. Heavies, mediums and handy grades were 5@10 cents lower while others were steady.

Prime heavy	$9.10@
Prime medium weights	9.10@
Heavy mixed	9.10@
Best heavy Yorkers	9.10@
Light Yorkers	8.90@
Pigs	8.50@8.60
Common to good roughs	7.75@8.25
Stags	7.00@7.25

NEW YORK LIVE STOCK

New York City, March 9, 1914.

Beef Cattle.—Receipts for week 3,000 head. Market irregular.

Steers	$6.50@9.50
Bulls	5.50@8.00
Cows	4.00@7.00
Dressed beef	12@14c.

Calf receipts 4200 head. Market steady.

Choice	$9.00@13.25
Culls	7.00@8.50

Dressed Calves higher. Dressed veals, 15@19½c.

Sheep and lamb receipts 10,000 head. Market steady.

Sheep	$4.50@6.00
Culls	6.25@7.00
Spring lambs	6.75@8.10

Hog receipts 8,800 head. Market steady. Choice, $9.15@9.30; roughs, $8.00@8.25.

BUFFALO LIVE STOCK

Buffalo, N. Y., March 9, 1914.

Cattle.—The week opened with a slow trade and lower basis as usual for the fore part of Lent. The close was about steady with a moderate demand. On today's market, cattle showed a 10@15c advance on all grades. Some 3,000 head were on sale.

Choice heavy steers	$8.75@9.10
Medium	8.25@8.85
Yearlings	8.00@8.50
Handy butchers	8.00@8.35
Good to choice fat cows	6.75@7.10
Good to choice heifers	7.00@7.85
Butcher bulls	7.00@7.50
Feeders	5.75@7.00
Stockers	5.00@6.25
Cows and springers	30.00@90.00

Calves.—The large supply at the opening of the week and the lower basis had a depressing effect on the week's business. The opening basis was $11@11.50 for the best veals and on the close the market was higher with a good demand and light supply. Basis $12@13. With 1,000 on sale today, best calves brought $12@12.25

Choice veals	$12.00@12.25
Lights and thin	6.00@8.75

Sheep and Lambs.—The sheep and lamb market was about in the same shape at the week's opening as the balance of the trade—slower and lower. Choice lambs opened the week on the basis of $8@8.15, and sheep, $5.75@6.25. The week closed with lower prices and a light demand from all quarters. With 12,000 head on hand this morning, sheep and lambs were steady at last week's prices.

Choice lambs	$7.85@8.00
Yearlings	7.00@7.25
Wethers	6.25@6.50
Ewes	5.50@6.00
Sheep	6.00@6.25

Hogs.—The liberal receipts Monday and the moderate trade at lower basis helped to make a slow market for the balance of the week. The opening basis on Yorkers was $9@9.10; mediums, $9.05@9.10. On the close the trade was fairly active and 10@15 cents higher on the best grades. Yorkers closed $9@9.10; pigs slow, $9@9.05. Common grades higher on the best grades. Receipts this morning numbered 14,000 and the loss at the end of the week was regained. On the strong market, heavies, mixed, mediums and yorkers sold well.

Heavies	$9.05@9.10
Mixed and medium	9.05@9.10
Yorkers	9.05@9.10
Light Yorkers	9.05@9.10
Pigs	8.75@8.90
Roughs	8.15@8.40
Stags	6.25@7.25

Horses.—With 600 head on sale, there was a fair trade for best workers. Best pairs brought $650@700; medium, $500@600.

NEW YORK MILK MARKET

New York City, March 9, 1914.

The milk market last week was demoralized by the snow storm of Sunday March 1. Farmers were unable to get their milk to the station for two or three days. The milk trains were badly delayed and in some cases brought belated supplies representing two or three days' production. The result was, among other thing, that several railroads failed to report their receipts for the week. This makes it impossible to publish the usual weekly table of receipts. It also makes it impossible to state the actual condition of the market as regards supply and demand, altho, probably the former exceeds the latter.

ELGIN EUTTER QUOTATION

Eligin, Ill., March 9, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter steady at 27 cents.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., March 9, 1914.

Hay.—Market improving slightly on the better grades. This is on account of the light receipts during the week. Lower grades dull and difficult to place.

No. 1 timothy	$16.50@17.00
No. 2 timothy	14.00@15.50
No. 3 timothy	10.00@12.00
No. 1 light mixed	14.50@15.00
No. 1 clover mixed	14.00@14.50
No. 2 clover mixed	10.00@12.00
No. 1 clover	14.00@14.50
No. 2 clover	10.00@12.00

Ear Corn.—There has been quite a free movement in ear corn during the week. Demand sufficient to care for arrivals.

New No. 2 yellow	68½@69½c.
New No. 3 yellow	65½@67c.

Shell Corn.—Shell corn shows little improvement, market somewhat dull.

New No. 2 yellow	70 @70½c.
New yellow No. 3, natural	66 @66½c.
New sample	64 @65c.

Oats.—Oat market firm and has shown surprising strength during the last few days. Prices higher.

No. 2 white	43¼@44c.
Standard oats	43@43½c.
Standard No. 3 oats	42@42½c.

Mill Feed.—Little better demand for mill feed on account of heavy winter weather.

No. 2 white midds	$27.50@28.00
No. 1 brown midds	26.00@26.50
W. W. Bran, coarse,	27.50@28.00
W. W. Bran, medium	27.00@27.50

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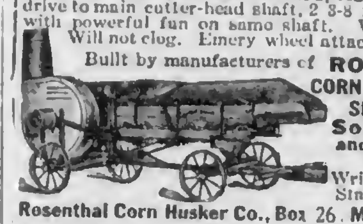

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Early Crop Odorless Fertilizer enables you to produce bigger and better crops and to mature them from one to three weeks earlier than if you used ordinary fertilizers. 100 lbs. of this special fertilizer will produce better results than 200 lbs. of ordinary brands. You may store Early Crop Odorless any length of time without it deteriorating. Sold direct to users in any quantity—no middlemen handle Consumers Brands.

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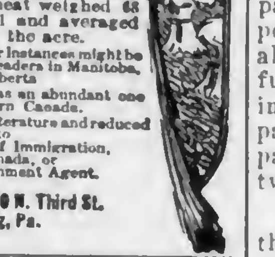

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. When reply by mail is requested, it becames private practice and a fee of $1 must accompany the letter. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Amaurosis—Glass Eye.—I have a 10 year-old horse that appears to have gone blind. I first noticed it about two months ago, just after a heavy snow had fallen. There is no growth, discolorment nor soreness of any kind, but the pupils of his eyes are enlarged more so than formerly. Is there any help for him? V. M., Clarks Summit, Pa.—This horse suffers from paralysis of the optic nerves, but he suffers no pain and their is total loss of vision. The causes of this ailment are tumors and other diseases of the brain, implicating the optic nerve. It may occur from an overloaded stomach, or from hemorrhage. I am inclined to believe it the result of brain hemorrhage in your horse. Unless you know what caused it and secure a removal of the cause, it is very doubtful about the restoration of vision. Give 1 dr ground nux vomica and 1 dr potassium iodide at a dose in feed, 3 times a day for 3 of 4 weeks. If you drive him and there is snow on the ground, cover eyes with a green veil.

Depraved Appetite—Tape Worm.—I have a dog that is very thin, eats well, bowels and kidneys seem to act all right, but he has a craving for filth. He eats pieces of wood, paper, rags and many filthy things that he comes in contact with. He did not shed his old coat last spring and I would like to know what will help him. A. W. L., Lafayette, N. J.—For every pound that your dog weighs, give him 1 grain of powdered kamala at a dose, every day or two for 2 or 3 days. If he is wormy, or has a tapeworm, this medicine will perhaps relieve him. Then give him 10 or 15 grains bicarbonate soda, 1 grain of quinine and one-sixtieth of a grain of strychnine at a dose in feed, 3 times a day.

Eczema—Garget—I have a mule which seems to have been over-heated and I am unable to keep her from rubbing hair off; besides, she has little ambition and I am inclined to believe that she has impure blood. I also have a heifer that had caked udder before calving. I applied nearly everything I could think of, but she showed no improvement. She gives very little milk from one teat. H. C. H., Nottingham, Pa.—Give your mule a dessert spoonful of hypo-sulphite of soda at a dose, 3 times a day; also dissolve 6 oz in 1 gal. of water and apply to itchy parts, twice a day. Dust on some finely powdered sulphur in her coat occasionally. Give your heifer a dessert spoonful powdered nitrate of potash at a dose in feed, 2 or 3 times a day and apply 1 part fluid extract of phytolacca and 2 parts olive oil to caked part of udder, twice a day.

Navicular Lameness.—I have a horse that shows considerable soreness in one front foot. I believe he suffers pain on account of raising foot off ground every few minutes. His urine is quite thick and brown colored. Pinching him over kidneys does not seem to make him flinch. J. G. W., Pennsburg, Pa.—Give your horse 1 dr. ground nux vomica, a teaspoonful powdered nitrate of potash and a tablespoonful bicarbonate of soda at a dose in feed, 3 times a day. Clip hair off pastern and apply 1 part powdered cantharides and 6 parts fresh lard to coronet, every 10 days. If the hoof is dry and contracted, apply lanolin daily.

Impure Blood.—We have a mare that has been troubled with lice and got very much out of condition before we discovered it. We have succeeded in killing the lice but altho we give her plenty of good feed she does not lay on flesh. She has several sores on body, but none of them appear to heal. We think her blood is out of condition. She has a good appetite and her teeth are in good order. E. T., West Deptford, N. J.—Give your mare 1 dr. fluid extract nux vomica, a dessert spoonful of Donovan's solution and a teaspoonful of salt at a dose in feed, 3 times a day, and apply 1 part iodoform and 9 parts boracic acid to sores, once or twice a day.

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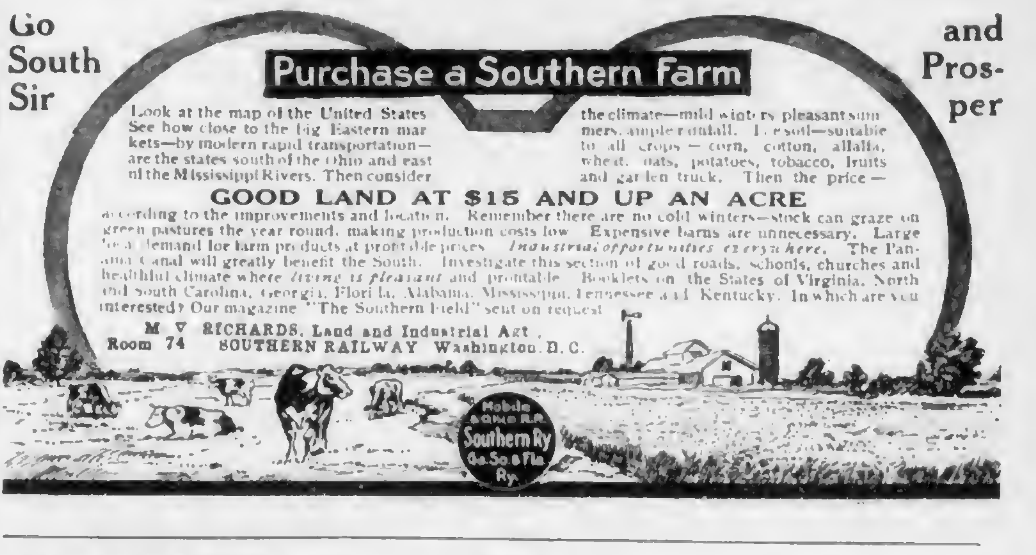

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Look at the map of the United States. See how close to the big Eastern markets—by modern rapid transportation—are the states south of the Ohio and east of the Mississippi Rivers. Then consider the climate—mild winters pleasant summers, ample rainfall. The soil—suitable to all crops—corn, cotton, alfalfa, wheat, oats, potatoes, tobacco, fruits and garden truck. Then the price—

GOOD LAND AT $15 AND UP AN ACRE

according to the improvements and location. Remember there are no cold winters—stock can graze on green pastures the year round, making production costs low. Expensive barns are unnecessary. Large local demand for farm products at profitable prices. *Industrial opportunities everywhere.* The Panama Canal will greatly benefit the South. Investigate this section of good roads, schools, churches and healthful climate where *living is pleasant* and profitable. Booklets on the States of Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky. In which are you interested? Our magazine "The Southern Field" sent on request.

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Use NATCO Tile—They Last Forever

Farm drainage needs durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Building Blocks and Sewer Pipe.

NATIONAL FIRE PROOFING COMPANY, Fulton Building, PITTSBURGH, PA.

These Seven Cows

May All Be Kept For One Year On

the product of one acre of land. It's hardly believable. And keeping seven cows for a whole year on one acre goes a long way towards reducing the cost of milk. Eureka Corn produced in one year, on one acre, 70 tons and 800 pounds. Figuring at the rate of 50 pounds of ensilage per day, which is a very liberal allowance, this amount will feed seven cows for one year, with enough left over for 261 feeds. This enormous crop won our $50.00 gold prize for the heaviest yield. We believe this record cannot be broken by any other corn, but we believe Eureka will beat its own record this coming year.

We offer $100.00 in Gold to the First Party Breaking our Present Record in 1914

We believe our crop of Eureka Corn for 1914 planting will germinate better than 98 percent. Eureka Corn was introduced by us about 25 years ago. It is a white, smooth dent corn, grows the tallest, usually from 16 to 20 feet, has the most leaves and is short jointed. If planted thin, it will yield two and three ears to the stalk. Planting Eureka Corn is as good as an insurance policy to any farmer. It grows where other kinds fail and the yield is tremendous. Last season Eureka Corn was planted in 45 states and the returns were exceedingly gratifying. We do not ask you to take our word for this, but refer you to any of the well-known farmers whose names are printed below.

Eureka Corn

Grows Tallest—Has Most Leaves—Greatest Number of Ears

You do not need to plant your whole farm when you can fill a 200-ton silo from 4 or 6 acres with Eureka. The best money you can spend on the farm is for good seed. Poor seed is dear at any price. Good seed is always worth what you pay for it. We're selling Eureka at last year's prices. Good seed is going to be very scarce and much higher before the planting season is over. Ask yourself what corn is worth per bushel, that will produce 70 tons and 800 pounds. We are not asking you to experiment, we are only asking you to buy seed corn that has been proven by thousands of successful farmers to be the best that money can buy.

Read What Some of Our Customers Say:

Bridgeport, N. J., Nov. 3, 1913.
Ross Bros. Co., Worcester, Mass.

Gentlemen:—Last spring I bought of you 1-2 bu. Eureka Seed Corn and to say that I was pleased with the results is putting it very mildly. It yielded about 3 or 4 times as much fodder as the ordinary seed which I planted next to it. I shall be more than pleased to recommend it to anyone who inquires about it. I expect to plant more of it next year and you may look for an order from me. Yours truly,
Signed, WM. H. BENNETT.

East Millstone, N. J., Dec. 22, 1913.
Ross Brothers Company, Worcester, Mass.

Gentlemen:—I have used Eureka ensilage corn for the past three seasons, and will say that it is the finest ensilage corn that grows. It withstands drought, grows taller and gives a greater yield of ensilage than any other variety of corn.
Yours very truly,
Signed, THOMAS H. METTLER.

New Hamburg, N. Y.
Ross Bros. Co., Worcester, Mass.

Gentlemen:—In reply to your inquiry about the Eureka Seed Corn will say that there is nothing else like it for fodder. It grows a larger and better stalk and will grow anywhere. The party who filled our silo thought that our corn beat anything that he had seen and wanted me to get him some of the seed for next year. Yours truly,
Signed, J. W. CROWELL.

Do not buy any corn without this trade mark

We refer you to any of these well-known planters: Bedford Farmers Co-op. Assn., Bedford Hills, N. Y.; Altoona Nursery Co., Altoona, Pa.; Locust Hill Dairy, Midway, Pa.; Hadley Dairy Farm, New Brunswick, N. J.; High Lawn Farm, Red Hook, N. Y.; Brooklands Farm, Poughkeepsie, N. Y.; H. C. Brill, Stewartsville, N. J.; Wm. H. Bennett, Bridgeport, N. J.; B. F. Mead, Warren, Pa.; Geo. H. Taylor, New Milford, Pa.

Sheffield World's Prize Flint Corn

still holds the record for the heaviest yield of flint corn, 123.8 bushels of crib dry corn from one acre. If you grow corn for grain, plant Sheffield. No other flint corn equals it. It can be planted later and will mature earlier than any other kind. It will produce more good ears, well filled out, than any other variety. Look out for your stock of flint corn before it is too late. There is a lot of poor corn on the market. Our stock of Sheffield has been tested and will germinate nearly 100 percent.

SEED OATS

It pays to buy the best, whether you wish to cut for green feed, for fodder, or ripen for grain. Anyone of the several kinds we offer will produce enough more feed to many times over pay for any difference in price. This has been proved by actual test and we are confident that in the stover alone you will get enough more feed to more than pay the difference in the price of the seed. You also get heavier and plumper heads filled with grain that will produce milk at a lower cost than almost any kind of green feed. All we ask is a trial.

LONG'S WHITE TARTAR

Reports from all sections show that this is an extremely productive variety. It is very early, of remarkably vigorous constitution and is suitable for all soils. The straw is long and stout and not liable to lodge or twist. The heads are from 8 1-2 to 10 inches in length and grain is of the largest size and remarkably plump and heavy, with thin hull. In its combination of desirable features, extreme earliness, great production of heavy, plump grain and long stout straw, the Long's White Tartar is not surpassed by any of the popular varieties. It is a one-sided oat, the grain all growing on one side, and each head will have from 50 to 80 long, plump grains. Price, pk. 35c., bus. $1.25, 2 bus. $2.40, 10 bus. $11.00, 20 bus. $20.00, bags included.

CANADIAN CLUSTER OATS

It has no equal as an oat to sow for green fodder. It produces an abundance of long, stiff straw with broad leaves. It is not as liable to rust as many other varieties and stands up well, while many other varieties will lodge. It will produce more feed with light fertilizing than any other kind, but will respond readily to a liberal supply of either commercial fertilizer or stable manure. The grain is large and plump and usually weighs about 40 lbs. to a measured bushel. Price, pk. 35c, bus. $1.25, 2 bus. $2.40, 10 bus. $11.00, 20 bus. $20.00, bags included.

CAUTION: Don't accept of any yellow dent or white horsetooth corn as Eureka. We received several letters last year from parties who were unable to get their Eureka from us and claimed that they had received from other dealers corn marked Eureka, which was entirely different from the genuine. Eureka corn, shelled, is always shipped in our trade-marked burlap bags, and ear corn is shipped in rat-proof crates holding 70 pounds. Either buy direct of us or some of our agents who have the genuine. Write at once for catalogue and quotations.

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THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880
PUBLISHED WEEKLY

VOL. 35—No. 12. PHILADELPHIA, PA., SATURDAY, MARCH 21, 1914. 2 YEARS FOR $1.00.

Prevention of Poultry Diseases.

By Prof. M. C. KILPATRICK,
Pennsylvania State College.

Judging from the tone of the many letters received by those engaged in poultry work in the agricultural colleges and at the experiment stations, the subject of poultry diseases and their treatment is always of interest to the average poultryman. The wise poultryman is more interested in methods of disease prevention than in methods of treatment, as he realizes the importance of keeping his flock in good physical condition, free from all disease, if it is to be a profitable proposition.

Disease is any departure from a normal state of health. Diseases are of two general classes, infectious and non-infectious. Practically all of the important diseases of poultry are infectious. These infectious diseases have their origin in organisms which are taken into the body of the fowl thru the genital-urinary tracts, thru bites of insects, thru inhalation and, particularly with the food and water. They spread from one fowl to another by contact or may be carried on the clothing of the poultryman or on implements used in caring for the flock. They escape from infected individuals thru all ordinary discharges and may be picked up by other fowls when feeding or drinking.

Disease breeding organisms are found to a greater or lesser extent in every poultry yard depending very largely upon the care with which it is kept. Fowls are being constantly exposed to disease. Because there is no indication of disease in the flock it does not follow that the disease germs are not present or that there is no danger of infection. The organisms may have lost their virulency or may not exist in sufficient numbers to make an appreciable impression upon the flock. Any circumstance which presents conditions favorable to their development will very likely be followed by an outbreak of disease.

Fowls of the same flock may be exposed to infection at the same time and under the same circumstances. One may die from the disease in a very short time and another may not contract the disease at all. This is due to the fact that one fowl is constitutionally strong and thus able to resist the attack of the disease organism and the other is not.

It is evident that liability to disease is dependent upon two factors—the virulence of the organism and the constitutional vigor of the fowl. The fowl of low vitality has very little chance of escaping the disease when exposed to virulent organisms. The problem of the general poultryman is to reduce the liability to disease. This may be accomplished by reducing the virulence of the organism and increasing the constitutional vigor of the fowl. There are, then, two fundamental factors involved in the maintenance of good health in poultry. These are constitutional vigor of the fowl and poultry sanitation and hygiene.

The subject of constitutional vigor has been discussed in a previous issue. It is not out of place, however, to refer to it again as there is no other one factor so important in poultry breeding. It is of great importance in its relation to disease. If the poultryman would only select his stock each year with particular reference to constitutional vigor, a large percentage of the great annual loss due to disease would be eliminated.

The second step in the process of disease prevention is to pay attention to the laws of sanitation and hygiene. It is only when this is done that constitutional vigor can be maintained and disease prevented.

The poultry house must be kept clean. It should be thoroly disinfected several times each year. Everything inside of the house, roosts, nests, dropping boards, etc., should be portable and easily removed. The floor should be of concrete or smooth boards. A dirt floor cannot be kept clean without great expense. To clean a house properly, everything inside should be removed. All the litter should be taken out and carted away. The ceiling, walls and floor should be thoroly swept with a stiff broom. Any droppings that adhere to the floor or wood work should be scraped off. The interior of the house should be thoroly washed using a hose if possible. After the house is dry, it should be thoroly sprayed with 3 percent cresol or creolin preparation, using a spray pump that will drive the disinfectant into every crack and corner of the house.

If a poultry house is to be kept in a sanitary condition it must have plenty of sunlight and fresh air. The house should be well ventilated without drafts and the sun should strike every part of the interior of the house at some period during the day. About one square foot of glass window should be provided for each 12 to 15 square feet of floor surface. Large openings in the front of the house should furnish the ventilation. These openings should be fitted with muslin-covered frames for use in cold weather. There should be one square foot of muslin covered opening for each 10 to 12 square feet of floor area.

The floor should be covered with clean dry litter. Filthy, damp or dusty litter is always dangerous. Replace the litter whenever it becomes damp or dirty. Avoid dampness in the poultry house, as fowls will not thrive in damp quarters. The dropping boards should be cleaned two or three times a week.

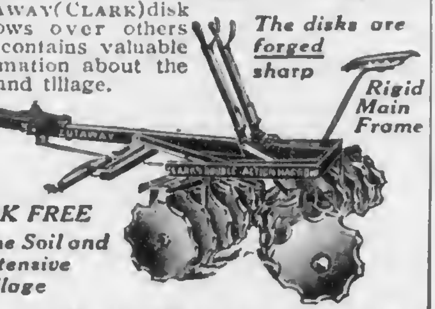
The land on which the fowls run must be kept

(Continued on page 7)

VOLUNTEER ROAD BRIGADE, AT WORK ON GLOUCESTER COUNTY ROAD, N. J. See Article on Page 3.

Cutaway (CLARK)

disk harrows are especially popular among farmers who understand the soil and intensive tillage, and who appreciate the big difference in the value of disk harrows. They are made in styles and sizes to meet the requirements of every farmer, whether he uses a large tractor or one small horse for power. Ask your dealer to show you a CUTAWAY (CLARK). If he doesn't sell CUTAWAY (CLARK) harrows, write us. Don't accept a substitute. We ship direct where we have no agent. Send for catalog, "*The Soil and Intensive Tillage.*" It shows the many advantages of CUTAWAY (CLARK) disk harrows over others and contains valuable information about the soil and tillage.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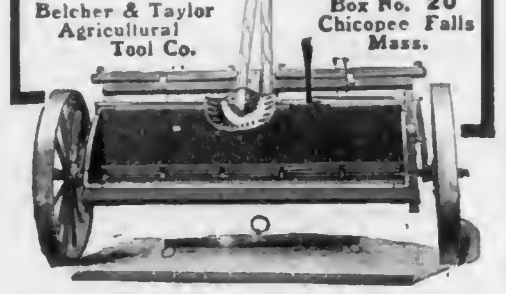

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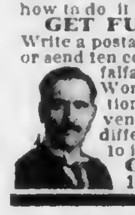
Seed inoculated with "NITRAGIN" produces sure and wonderful crops. Big profits and sure success where you have failed before. Increases crops everywhere. Alfalfa on my farm last year produced $90 per acre. The secret is "NITRAGIN," pure seed and knowing how to do it according to the Galloway system.

GET FULL PARTICULARS TODAY

Write a postal and get our 1914 Pure Seed Book Free, or send ten cents for Galloway's 62-page, 25-cent Alfalfa book entitled "How to Grow Alfalfa, the Wonder Crop"—a mine of valuable information; tells how to get big, heavy stands, prevent winter killing, prepare seed bed, about different varieties, planting and curing, how to inoculate seed and many other things.



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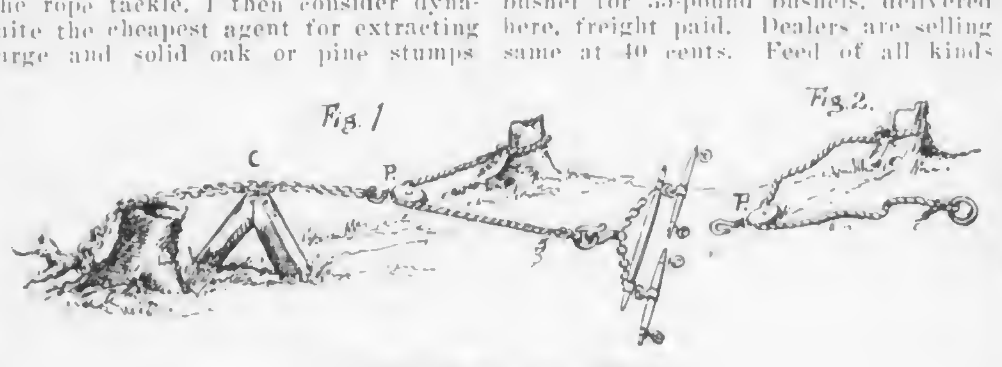
METHODS OF STUMPING NEW LAND

Where land is cheap it is often more economical to seed the clearing down to a mixture of clovers and grasses in the wheat or rye, whichever is used as the first grain crop. Then we would allow the grass sod to remain 5 to 7 years for hand mowing or pasture, during which time the stumps ripen very rapidly. We first go into the stump field with a good span of horses and two inch ropes, one about 50 feet long, the other 75 to 80 feet. We use two strong pulley blocks and a strong chain. In these we have an outfit that is light and can be operated very rapidly, as many stumps are pulled from one anchor stump. Two men work to the best advantage, one spending his entire time releasing and hitching.

The illustration shows ropes No. 1 and No. 2. No. 1 is attached to the stump. One end of rope is tied to an anchor stump while the other end is tied to a heavy ring for convenience in hitching the double tree. The rope passes thru pulley at P, where the chain is hooked. Now if the team gives a pull on the stump a glance will decide whether more power is needed. If so, we simply unhook the team at the first rope ring and step the horses up to ring on No. 2. We hook pulley (P) of No. 2 in the ring just abandoned by the team. Now we have increased the surge or power from 4 to 8 horses, and have also rendered the jerk on the team more elastic. C is simply a pole crutch over which the chain may pass to effect an upward lift on a stump or post, as we sometimes use it to lift fence posts. Rope and block No. 2 is kept near-by to supplement power quickly as needed, and requires less handling than a long rope and double block as sometimes used. In this way extra rope and slack are only to handle as needed.

After the field is gone over with the rope tackle, I then consider dynamite the cheapest agent for extracting large and solid oak or pine stumps of which we have many. When these are extracted whole by the use of a powerful machine, the expense of punching off the adhering clay is often very great, and then we have trouble to pile and burn the whole stump, while blasted fragments are easy to collect and burn readily. The average cost of blowing these larger stumps is about 23 cents each, or $40 or $45 per acre if the ropes or tackle was skillfully used and also if the man using dynamite understands his job. We find men who at a glance measure the force required for a stump of certain character, and they are able to center their shots very cleverly.—D. H. Watts, Clearfield Co., Pa.



HITCHES FOR PULLING STUMPS.

PURCHASE OF FERTILIZERS

At this season of the year many farmers are making contracts for fertilizer and in many cases I fear these contracts are made on meagre information. Commercial fertilizers are a great help in maintaining or restoring fertility to our soils, but we do not always get what we buy and pay for. There are many subterfuges in the composition of these manures from sludge acid to hoofs, hair and horns. There are also actual shortages in which the content of a given element represented on the printed analysis is not found in the material.

There is also wide range of prices on the same brand of goods that cannot altogether be accounted for by the difference of location relative to freight rates. Again, there is a large waste that is found in the making of the contract itself. The manufacturer naturally urges the complete fertilizer upon the customer, no doubt on account of the fact that the complete goods are the highest priced goods and therefore most likely carry the larger per ton profit. But in very many cases the purchase of nitrogen is a very unnecessary as well as expensive proceeding. In certain crops no doubt it is necessary, but where a farmer makes and utilizes a goodly amount of barnyard manure, and grows in the routine all the vegetable matter to plow down he can in justice to the regular crops he will have little need to buy nitrogen to keep up the soil fertility. There is no deception in the kind of material furnished by a crop of clover, for instance, and it has the added advantage in that it helps to keep the soil loose and open and in condition to receive the cheapest and best of all fertilizers, sunlight and moisture. When such a farmer is persuaded to buy a complete fertilizer, when a combination of phosphoric acid and potash is all he needs, a real waste is made.

In our opinion there is no better way to avoid waste and losses than to write to the Department of Agriculture of your state and ask for "The Tabulated Analysis" sent free on request. When it comes, make a close, comparative study of the different makes and prices. This official document is one that an agent cannot talk against. The samples are taken from the different station platforms from goods consigned to an actual purchaser, taken by an agent of the state without the knowledge of the manufacturer, and analyzed by the states' chemists. You will find among other things that the goods of some factories have lots of stars to them (indicating shortage) and other firms have almost none. You will see the range of selling prices in connection with commercial value. This book should be studied especially by purchasing agents of Granges before they close their contract for the fertilizers for their Grange. Many dollars in price as well as in value can often be saved by a consistent use of this avenue of information.—John A. McSparran, Lancaster Co., Pa.

LAWRENCE COUNTY NOTES

Corn is not keeping well, owing to the premature killing by frosts early in September. Farmers are importing ear corn from Ohio and paying 36 cents a bushel for 35-pound bushels, delivered here, freight paid. Dealers are selling same at 40 cents. Feed of all kinds is scarce on the farms and on all the dairy farms concentrates are bought in large quantities. The manurial products from these concentrates help to preserve the fertility of our glaciated farms, but at the expense of the farms in the southern and western states whence the concentrates come, such as cottonseed, oil meal, bran, corn and oats.

The regular rotation here is corn, oats, wheat, clover and timothy hay, pasture one year, then corn, etc., again. Agricultural writers claim that this rotation will exhaust the soil, and as our production is gradually decreasing, they are no doubt correct. Dr. Thorne, of Ohio, advises to grow soy beans instead of oats and to plow down the second growth of clover the winter of the fourth year, then begin with corn again, thus having two legume crops in every four year rotation. Some change in the rotation may eventually have to be adopted, for the old one of five years is no longer profitable here in general farming. Consequently most farmers, rather than change the practice of centuries, are adopting some side line, such as fruit production, truck crops, dairying, poultry, etc. All are forced to use "complete" fertilizers, the cheap ones, such as 1-8-4, being the most popular. But lately a few are adopting the plan of buying the chemicals, nitrate of soda, acid phosphate and muriate of potash, and mixing these at home.

Our New Wilmington grange is buying two carloads of chemicals this year at wholesale, and this will make a large saving in cost for the members. Our seed corn and clover seed are also to be bought in the same way, as neither one of these is grown here in sufficient quantity. The general scarcity of apples thru the country has made the price the highest ever known here, apples now commanding $6 a barrel, wholesale, or 6 cents a pound to the consumer. The nation-wide frosts in May were responsible for the great shortage—a condition not likely to occur again for a generation. The San Jose scale is gradually spreading here, and those who do not use the dormant season spraying are losing their orchards. Our roads are the old fashioned mud roads; the King drag is not much used. State aid has been but little sought here in road building. The bridges swept away in the floods about a year ago have never been replaced.—J. C. M. Johnston.

PRATT'S HAND-BOOK for FRUIT GROWERS

There will NEVER be enough number one apples—ALWAYS too many cider apples. Don't waste your time and your trees growing inferior grades. Use "Scalecide" the one sure spray for San Jose scale, and produce number one fruit. "Scalecide" is 100% efficient against scale and has marked fungicidal properties. Used by best orchardists the world over. Endorsed by Experiment Stations. Our SERVICE DEPARTMENT furnishes everything for the orchard. Write today to Dept. A for new booklet—"Pratt's Handbook for Fruit Growers" and "Scalecide the Tree Saver." Both free.

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These Seven Cows

Kept One Year On 1 Acre of
Eureka Corn. This seed corn yielded over 70 tons on one acre—enough to feed seven cows a whole year. No other corn has ever equalled it.

EUREKA CORN
grows tallest—has most leaves—more ears

Why plant ordinary corn that yields only 15 to 25 tons an acre, when you can get 70 tons an acre at same price. Write for our 1914 catalog, quotations and list of our wonderful varieties of big-yielding corn and seeds.

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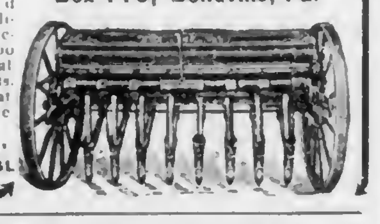

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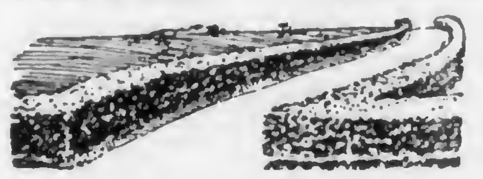
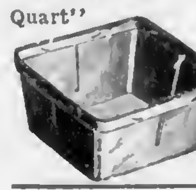


The "Berlin Quart"



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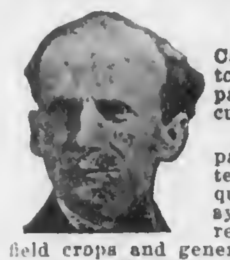


Farm Crop Notes

By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

NATURAL METHODS OF SOIL IMPROVEMENT

I. Tillage—Plowing

After the farmer realizes that a correct mechanical or physical condition of the soil is quite as important to best crop production as is the chemical content, he will begin to study and apply the best methods of tilling his land, as the first step in the process of improvement.

Plowing is the first step in the cultivation of the soil, and should be rightly done, since a poor job can not be entirely corrected by any kind of after cultivation. The objects of plowing are to loosen, sub-divide and aerate the soil particles; turn under sod or other organic material that would interfere with cultivation and to turn to the surface plant food that has leached downward. The more nearly the plow performs the operation of turning the soil as it is turned by the spade in the hands of a good old German gardener, the better. In fact, spading seems to be the ideal way of performing this operation. A good plow cuts loose its furrow, lifts up the slice, breaks apart the particles, causing them to move upon each other, then rolls them off against the preceeding furrow slice, a well pulverized strip of soil.

What the plowman looks back upon with pride, and considers a beautiful job, is very often the poorest kind of plowing. This is the case when the furrow slice is turned completely over and remains intact, as you would turn over a board. The shape of the mold board, the width and depth of the furrow, must be right in order to do good plowing. Instead of turning the slice over flat, it should be turned against the preceeding slice. If a jointer is used, it should not be set so deep as to roll the sod into the bottom of the furrow, but only deep enough to leave a completely "raw" edge to the furrow slice when set over against the other.

Gradually increasing the depth of plowing is one way of increasing the productiveness of the soil. There is no question but that the majority of farmers plow too shallow a furrow. Where plowing has been the practice for years, and always at the same depth, an artificial hard-pan, almost impervious to water, is often found. This is especially true in soils having clay sub-soil. The tramping of the horses, the dragging of the plow sole, and the walking of the man on the moist furrow-bottom year after year has so packed the clay as to produce the hard-pan effect. Heavy rains will wash the soil that is in this condition, and on the other hand, it will dry out much more quickly because the water can not sink into the sub-soil.

Deeper plowing will also bring to the surface plant food that has leached beyond the reach of most plant roots. With the exception of humus and nitrogen, the elements of plant food increase in quantities as we go downward for a few feet. True, they are usually in a more or less insoluble condition but when turned up and exposed to freezing, and to the influence of the sun and air, they become available. Soil should not be plowed at the same depth two years in succession. It should vary with each crop in the rotation. If potatoes is one of the crops, let the depth be the greatest for this crop.

Generally speaking, fall plowing should be deep. This gives time for the soil to settle before planting, and also turns up the sub-soil where the freezing and thawing can pulverize it. Whether fall-plowing is a good practice or not is a never-ending question for debate. While there are some disadvantages and some loss, the advantages and gains usually outweigh the losses, so that it may be set down as an economical thing to do. This applies especially to sod land. There is little nitrogen converted into a leachable form after cold weather begins. It is work that can often be done when there is nothing else to do and the time gained is valuable when the rush of spring work begins.

In some places, it is customary to plow corn stubbles in the fall in order to sow oats early. Of course, the ideal way is to sow a cover crop in corn and plow in spring. This saves much loss, but where cover crops are not used there is probably not much more loss in plowing stubbles than when left without a cover crop.

Harrowing and Cultivation next week.—R. P. K.

VOLUNTEER ROAD BUILDING

In almost every community we may hear people complaining of waste in road money. There are likewise complaints of poor roads. But neither complaint brings better roads or larger or better applied funds. A few farmers of Gloucester County, New Jersey, in the vicinity of Pitman recently got together for some constructive volunteer work. The number included J. P. Kincaid, A. S. Densten, J. B. Warren, W. B. Fisher and A. Thies, Jr. They secured the promise of the mayor of Pitman and the road committee of the borough to provide gravel and all the shovelers needed if the farmers would provide the teams to grade and gravel a stretch of road about one mile in length which connected a rich agricultural community with a stone road.

The farmers, or team committee as they were called made a canvass and in less than one day had secured 32 teams to start work, all team work to be donated free. Work was started at once. The road is 16 feet wide and is dressed with a covering from 8 to 12 inches deep of good clay gravel. The work was completed in 8½ days, with an average of 16 teams on the job per day. On one day there were 21 teams on the job.

We believe that if farmers and businessmen in and about all rural towns would get together in this way we would soon have roads that all might be proud of. We found very few farmers who were not willing to donate the use of their teams in this way. Their teams were idle and they readily appreciated that in helping in such a community undertaking they were merely helping themselves. We all appreciate that good roads are essential in the building of a prosperous community.—James Kincaid, Gloucester Co., N. J.

NODULES ON COWPEAS

C. B., Atco, N. J., writes: "I sowed a field of cow peas last year. They were inoculated, manured, and made a good growth, but did not show any nodules on the roots. The ground is very light and sandy. Will some one kindly tell me why there was no nodule development?"

The failure of the cowpeas to develop nodules may have been due to two causes. First, the inoculating material may have been inactive, or dead, so that the cultures failed to develop. Second, the presence of barnyard manure may have supplied the necessary nitrogen for the peas so that they were not obliged to secure it from the air. It is a well-known fact that in the presence of considerable quantities of nitrogenous fertilizers, cowpeas and other legumes will put on few if any tubercles or nodules.—A. E. G.

TREATING OATS FOR SMUT

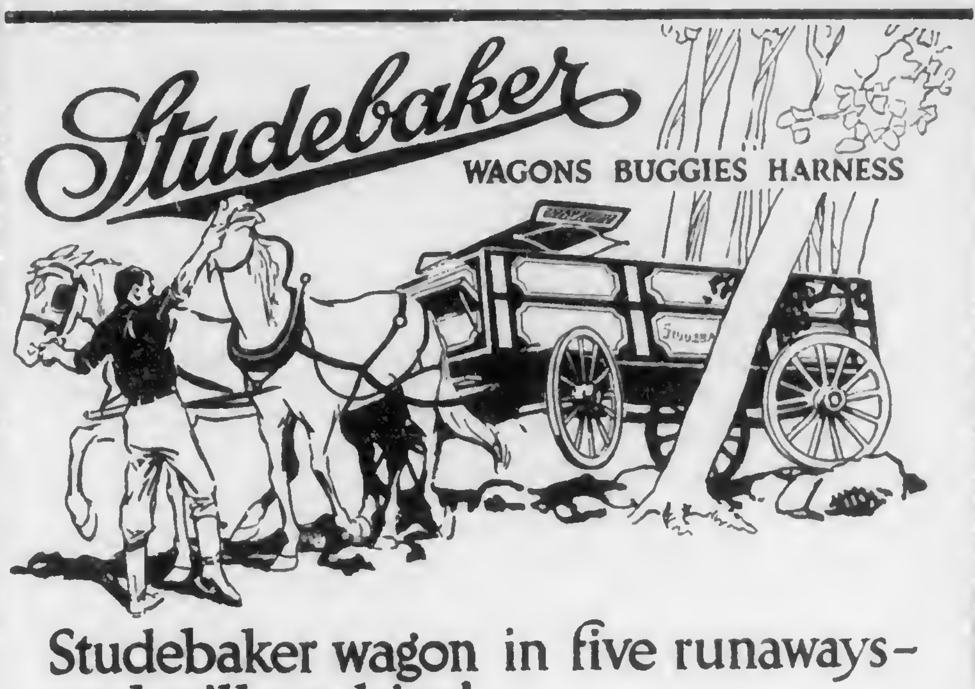
Kindly tell us how to give the formaldehyde treatment for smut in oats.—H. J. M., New Castle, Pa.

The formalin treatment is effective and about the easiest to use for oats. Make a solution of one pint of 40-per-cent formaldehyde to 40 gallons of water. Sprinkle the oats while shoveling them over on the floor. It will require about a gallon of the solution to thoroly treat one bushel of oats. They should be left in a pile for 3 or 4 hours, then be spread out and dried quickly by repeated shoveling over.

PENNSYLVANIA FARMER PAYS LIVE STOCK ADVERTISERS

Enclosed is my check to renew my live stock advertisement for 13 more insertions. Results have been good. Robt. D. Eddy, Cattaraugus, N. Y. Mar. 10, 1913

Studebaker
WAGONS BUGGIES HARNESS



Studebaker wagon in five runaways—and still working

Mr. Andrew Kittleson, of Litchfield, Minn., bought a Studebaker Wagon in 1869. He is proud of his Studebaker, and his letter describing its long life of usefulness is so interesting that it would be difficult to write a better advertisement. Here is Mr. Kittleson's letter:

"I bought my Studebaker in November, 1869, at Litchfield from Flynn Brothers, and it has been continually used on my farm ever since. This wagon has given me perfect satisfaction. Never was there a lighter running wagon and it has been of no expense to me. It has hauled thousands of bushels of grain to market, over mighty poor roads.

"My Studebaker has been through five runaways. On one occasion the team ran half a mile and into some oak trees where horses and wagon hung until help came. Another time my team ran into a stone pile. One horse was killed but the wagon was uninjured. It seems to stand all it can get.

"When I built my home I loaded 5000 pounds of sand into my Studebaker. The carpenters were surprised that the wagon could stand such a big load. I am using this wagon at the present time and expect to use it for many years to come."

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POUNDS OF MATERIALS Required to Make Approximate Mixtures.

ANALYSIS								COST PER TON OF PLANT FOOD	
Ammonia	Phosphate	Potash	Nitrate of Soda	Animal 7-15 Tankage	Acid Phosphate 14 per cent Available	Potash Muriate	Unnecessary Filler (dry loam can be used)	F. O. B. New York or Boston	F. O. B. Baltimore
	10	5			1450	200	350	$13.16	$12.08
1	8	5	50	150	1100	200	500	$14.81	$13.98
2	8	5	100	300	1000	200	400	$18.00	$17.25
3	8	5	200	300	1000	200	200	$20.55	$19.80
2	8	10	100	300	1000	400	200	$22.10	$21.35
3	8	10	200	300	1000	400	100	$24.65	$23.90
3	6	10	200	300	700	400	400	$22.78	$22.25
4	6	10	300	300	700	400	300	$25.33	$24.80
4	7	8	300	300	850	350	200	$25.24	$24.60
5	7	5	300	600	700	200	200	$26.33	$25.80

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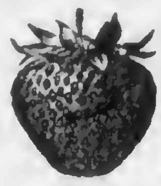

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Horticulture

SPRAYING EQUIPMENT

We have, fortunately, passed the stage when growers ask whether they must spray, for that is now an assured fact. The important point is, how and with what shall the spraying be done? We so frequently see spraying done with either the wrong material or the wrong machine that there seems a place for a discussion of these questions.

The manufacturer of spraying machines has so developed his business that there is at hand a device for every sort of work, and no one will be efficient to the highest degree unless used in the place for which it was intended.

First of all, in answer to the often asked question as to whether the hand or power outfits are most serviceable, the reply must be governed by the work to be done. If the spraying is to be in an orchard, the hand machines will be most economical for the first six or seven years in the case of the apple, pear or cherry. For peaches, and plums, this time will be reduced to about four or five years. In other words, the hand machines will do good work in young orchards and to use the heavier and more powerful outfits is only to waste time and money. For potatoes, cabbage, tomatoes, bush fruits etc., the hand pumps are always the machines to use, and never at any time in such plantations will it pay to use the power sprayers.

FITTING GROUND FOR INTER-CROPPING RHUBARB IN YOUNG ORCHARD.
Buttonwood Farm, N. J.

Hand pumps are made in a large variety of patterns and styles, but they all operate in the same general way. They are mounted on barrels and operated by a lever. The buyer of such a pump has a choice of two types of barrel pumps; the first being the single-acting machine mounted on the top of the barrel, and the second, the double-acting pump mounted on skids and connected to the tank by means of an intake hose. The former will develop a pressure of about 90 to 100 pounds and is most serviceable in spraying small crops and bush fruits and trees during the first or second years. This same type of pump is often geared to the hind wheels of the cart and thus converted into the traction sprayer in which form it is even better adapted to the spraying of potatoes and cabbage. This type of pump, however, is never intended to be used in orchards which have passed their third or fourth years, since not enough power is developed to do efficient work.

The second type of pump mentioned is superior in every way for small orchard spraying since it will develop a constant pressure of 125 pounds or more and is less tiring to the operator. This type then is the one intended for use in the home orchard and in commercial planting where the trees are not over 8 or 10 feet in height.

While all of the pumps made by the standard spray concerns are good there is a great difference in them. The working parts should all be of brass in order to withstand the action of the lime and sulphur and the valves should all be of either the ball or poppet type. Exposed valves are a great convenience in cleaning and will save many minutes in this operation.

Power machines are of two general types and are designed for use in spraying tall ornamental trees and commercial orchards in which the trees have reached a bearing age. In such places no other outfit will do the best work. The first type is that which is fitted with a gasolene engine and a pump, and the second is operated by compressed air. In either case the machinery should be of the best materials and construction and the outfit equipped with a tower so the taller trees may be conveniently sprayed. A power sprayer should develop at least 150 pounds pressure and should not be operated at any less, since it requires this amount to completely break up the material into the fine mist which is wanted.

Probably the most essential point of a sprayer is the nozzle and here is where so many are weak. There are three types of nozzles, all of which are used in modern spraying; the Bordeaux, Vermorel and the disc nozzles. The first has only one place in orchard spraying and that is in the codling moth spray when the object is to develop a driving spray into the calyx cups of the blossoms rather than a fine mist to cover the entire tree. The nozzle makes a fan-shaped stream, and for the ordinary treatments will not give great satisfaction. The Vermorel breaks the material up finer but has the disadvantage of clogging more often and, for general orchard spraying is less efficient. The disc type is fitted with a disc thru which the material passes after it has been whorled in the whorl chamber. There are generally two discs provided with such nozzles, one with a small opening and the other with a larger one. The former is the one to be used in ordinary orchard spraying and for small crop work, while the larger one is designed for ornamental work on tall trees. The small disc is most efficient when used at a distance of about 8 feet from the object. This is very important, since if used at a closer distance only a portion of the object will be thoroly covered and when used at a greater distance there is less control over the direction of the spray. The larger nozzles send the material in a coarse stream for a distance of about 20 feet or more depending on the pressure used, at which point it breaks into finer particles. Hence such nozzles should not be used closer than 20 or more feet, or until the stream breaks. The finer the hole in the disc, the finer will be the spray and the closer the object will have to be to be thoroly covered.

In order to get good results in spraying, it is essential to use the proper machine for the particular work, to use the most efficient nozzles and to hold the nozzle at the correct distance from the object sprayed. This latter is largely a matter of experiment, depending upon the style of nozzle used.—L. Wayne Arny, Cornell University.

CARE OF GRAPES

The season for dormant pruning will soon be past. Investigate and study the vine or vines at once. The purpose of pruning is to encourage maximum production of fruit, to retain full vigor of vine and to aid the annual formation of fruit spurs. Incidentally light and air are admitted, fungus diseases lessened and thoro spraying facilitated.

The grower must realize that each vigorous bud left will produce from one to four clusters of grapes. He must take into account the vine as it is and the location, soil and variety. Many skilled growers cut back to one bud and very few leave more than two buds to the shoot, which practice insures fine fruit and vigorous growth of vine for subsequent crops. It should be remembered that old wood never bears again, that fruit shoots of this year are the source of shoots next year. This brings us to the point that old arbors or even vines on posts become too much encumbered by old or foundation wood which should occasionally be removed and new arms trained out to become a part of the frame work. Where vines on arbor or trellis have become matted thru neglect it is best to release them, reshape them on the ground and then tie them up again. The error of carrying too much wood is far more common than too severe pruning.

Periodical spraying with bordeaux 5-5-50 to which 3 lbs. of arsenate of lead has been added is essential to success. The first application should be made when the new shoots are 6 to 8 inches in length. Continue at intervals of two weeks until the berries are the size of buck shot. The spray formula as above is a strong fungicide which should eliminate black rot and mildew. The arsenate of lead is an effective insecticide. If leaf hoppers are at work it will be necessary to direct the spray with plenty of force on the underside of leaves as much as possible. The work of spraying will be facilitated if a stock solution of the copper sulphate (Blue stone) is made up in a separate vessel, each gallon of water carrying 2 pounds of the blue stone in solution and likewise water and lime in solution. When filling the spray barrel all materials should be strained thru a strainer of 25 to 30 meshes to the inch.

We find that good cultivation from May until August with cutaway and tooth harrow keeps down the weeds and conserves moisture, always insuring a better crop. This tillage should become shallow towards the end of the season as then the roots are nearer the surface.

Fertilizer may be applied as seems best. No uniform formula can be outlined for all soils and ages of vines but on reaching bearing age we would use 200 pounds of muriate of potash per acre and double that amount of basic slag. The slag contains phosphoric acid in a cheap carrier and some lime, which will be of service in getting a cover crop on the vineyard when organic material is needed. Stable manure when available is excellent on soils where a normal growth of vine is difficult to obtain. The following grape varieties are fine for home supply or local market: Miller's Early, Moore's Early, Niagara, Delaware, Worden, Concord.—D. H. Watts, Delaware Co., Pa.

FERTILIZATION IN THE ORCHARD

If the ground has been put in good shape previously to planting and is rich and well filled with humus, little fertilizer is needed in the orchard until the trees are of bearing age. If the young apple trees do not make a proper growth, nitrate of soda at the rate of about one ounce per tree will bring them along, or if a complete fertilizer is desired, mix 1 oz. nitrate soda, 8 to 12 oz. basic slag and 6 to 8 oz. of a low grade sulphate and apply around each tree as early in the season as possible. A fork full or two of well rotted stable manure is very good to bring the tree along, but care should be taken to keep it away from the tree for a distance of six inches all around.

Keep the trees growing rapidly until they begin to bear; then they should be checked somewhat and their energy directed to producing fruit.

Peaches are much faster growing than apples and rarely require anything but plenty of cultivation until bearing time is reached. Pears should be grown very slowly, because of the blight, which will be pretty sure to prove disastrous, otherwise. Plums grow very rapidly and do not need any special precaution as they are not subject to blight. After they have begun to bear, cut back severely annually. Cherries should not be forced along rapidly because they are apt to split apart and spoil the trees. This applies especially to the sweet varieties.—H. G. Fasset, Wyoming Co., Pa.

REMOVABLE PANELS FOR A GARDEN FENCE

There are many old garden fences that will have to be repaired this spring and many other new ones built. The first thing to consider is the convenience of having the end panels of the fence arranged in such a way that they may be taken down quickly so that in plowing the garden the horses will have plenty of room to turn outside. Until we solved this important problem we always had to use the spade. If we plowed, we never could plow up close to the fence and this also had to be spaded up. A great many people would use the horse and plow in the garden if it were not for the fact that in a small garden as much is destroyed in turning as is made by the plowing itself.

If the garden is made longer one way than the other, it may be plowed the long way and by having the end panels arranged so that they may be lifted out the horses may be turned in the road, lot, pasture or whatever the garden adjoins, and there will be no more weedy fence rows surrounding the garden. A garden 10 rods long and 5 or 6 rods wide is a very nice size. Our largest garden is 12 by 5 rods, and the small one 8 by 6 rods. The fencing used is woven wire chicken and hog proof, and the ends are arranged so that the panels may be taken out at any time. No possible amount of hoeing or hand plowing will accomplish what can be done with the horse, and these removable panels solve the difficulty very satisfactorily for us. Another thing that would help wonderfully in keeping the garden clean would be to change the old method of setting such things as sage, rhubarb and horseradish along the garden fence. We have solved this problem by setting these permanent plants in rows in the middle of our largest garden, and in this way we are able to farm up close to these plants and they are much more easily kept clean from weeds. We can also plow up close to the sides of the fence now without danger from plowing up some valuable garden plant. We plant a row of pole beans around the fence and utilize it for a support. Peas may also be planted in this manner with excellent results and one will not have to bother driving poles in the ground for them to climb upon, as the fence answers this purpose. — H. W. Swope, Montour Co., Pa.

INSECT POISONS

Dr. Thomas J. Headlee, State Entomologist of New Jersey, in a recent address on insect poisons, recommended arsenate of lead as the best all around poison for insects that chew vegetation, and can thus be attacked thru the stomach. He thinks it better than paris green for potato bugs, because paris green, while much cheaper, and really effective, will not stay on the plant, and if put on too thick it will burn the potato vine. Arsenate of lead mixed with soap will stay on cabbage leaves, and is about the only poison that will. Cranberry growers use it, and use a special mixture to make it stick on the cranberry leaf. Arsenate of lead powder and sulphur, blown on the peach will prevent all peach scabs. It is also the only effective remedy against the ear-worm in corn.

The use of arsenate of zinc was deprecated due to the fact that it is in a trial state and no one knows just what it will do, while arsenate of lead has been well tested out. Arsenic poisons, according to Dr. Headlee will not kill lice on cabbage, squashes, canteloupes, etc., or any other pest that sucks the juice of a plant instead of eating it. For these other poisons are necessary. Kerosene will do it, but it is bad on most plants. Various forms of mixing kerosene and water, by aid of soap, have been tried more or less successfully but kerosene when used often on peach trees is bad for them, and is apt to kill vegetables like cucumbers and melons. Soap and water will also kill lice without the kerosene. The best mixture, however, is nicotine sulphate, made from the stems and refuse of tobacco plants. A standard variety of this is made and when mixed with soap and water is the best remedy for juice sucking pests. By the use of soap, the nicotine becomes much more effective, and ten times as much water can be used in the solution with an equally good effect.

For general spraying Dr. Headlee favors what he calls a "three way" mixture which will kill insects, lice and fungi. This may be made by mixing the nicotine sulphate with Bordeaux mixture, with paris green or with sulphate of lead.

The remedy advocated for the control of the ear worm, which attacks 92 per cent of the ears of sweet corn, is to keep the tip of the ear, where the silk

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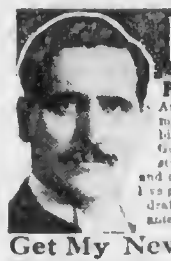

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APPLE QUESTIONS

Your recent excellent articles on the "The Apple of Tomorrow," leaves a very good taste in the mouth. Will you please ask the author to make a few things more definite? What are the "varieties that blossom at the same time" and does the whole list given, from Akin to Yellow Newtown, blossom at the same time? Again, which variety is "a heavy maker of pollen?" Which varieties are self-sterile and which are self-pollenizers? Also what are synonyms for his apple, "Sweet Paradise," as I cannot find that name in any of my works on fruit culture?

By writing to the Director of U. S. Experiment Station, Corvallis, Oregon, asking for bulletin on pollination of the apple, you will have most of your questions answered. A bulletin may also be had for the asking, by writing to the Director of the Experiment Station at Geneva, N. Y., for a bulletin on the blossoming period of apples and other fruits. Further information as to the blossoming period, as well as to the self-sterile, self-fertile and vigorously pollinating varieties of apples may be had by writing to Prof. H. P. Gould, Pomologist, Bureau of Plant Industry, Washington.

Two-thirds of the varieties of apples are self-sterile; and even the self fertile varieties make better fruit if cross pollinated. Of the heavy pollinators York Imperial and Wagener are in the list; and we are retaining some York in our best orchards, for the purpose of pollination.

The Sweet Paradise apple is also called Winter Paradise. I used the term Sweet as more descriptive.—Abram Bunn, Bedford Co., Pa.

The Vegetable Garden.—This is the title of Bulletin No. 171 of the Purdue Experiment Station, Lafayette, Ind., which discusses arrangement, planting and care of the home vegetable garden. The garden problems of those who live in the town have been considered, as well as the problems of the farmer. The plans presented and the recommendations made may be modified to suit both town and country conditions.

Peach Leaf Curl.—Circular No. 29 of the New Jersey Experiment Station, New Brunswick, N. J., under the above heading describes the characteristics of the fungus in question and its control.

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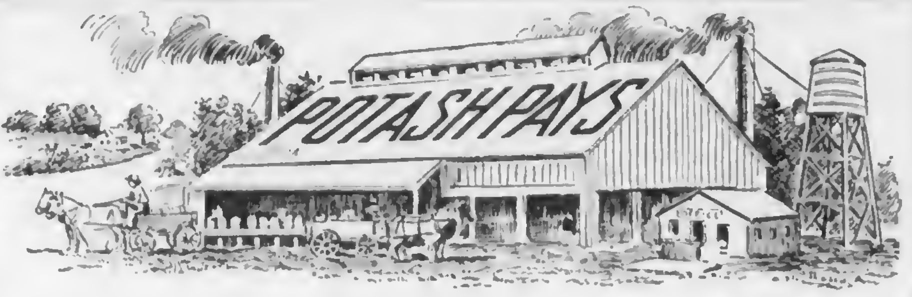

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Poultry

PREVENTION OF POULTRY DISEASES

(Continued from page 1.)

clean. On the farm this can best be done by using portable colony houses and moving the fowls to a new location each year or by providing two large fields in connection with permanent houses that may be used alternately, growing crops in one while the other is used for pasturing the poultry. If small yards must be used, plow them up frequently and sow oats, rape or some other quick growing seed. Use lime liberally.

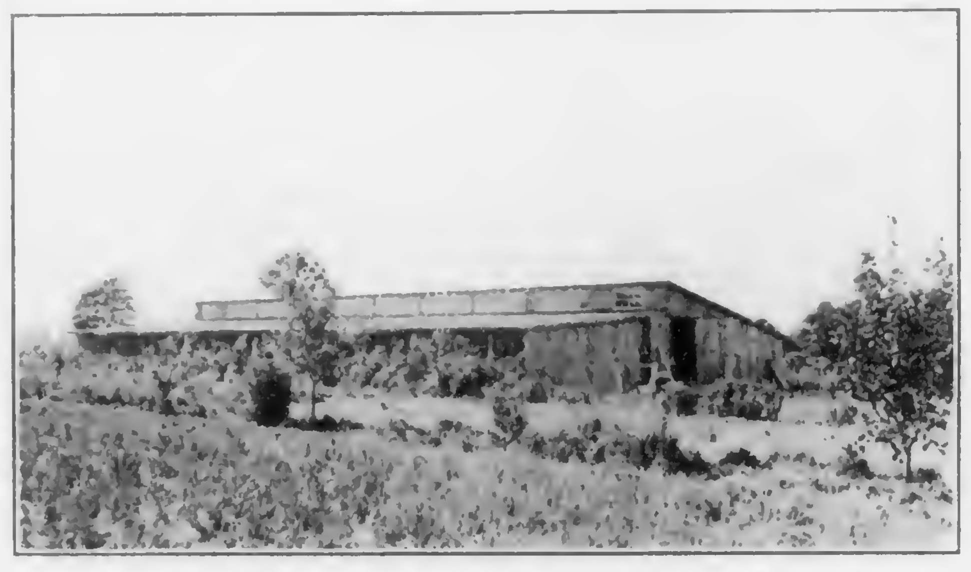
Close attention must be paid to the feeding. Never use any material in the ration that is not clean and wholesome. If wet mashes are used, see that the feed troughs are thoroly cleaned after each feeding. Avoid overfeeding. Successful feeding means heavy feeding but the feeder should be constantly on guard against digestive disorders. Provide plenty of succulent green feed. Under normal conditions, fresh air, sunlight and a liberal supply of green feed are the only tonics or medicines needed for fowls.

The supply of drinking water for the fowls should be clean and fresh. Disease is more rapidly spread thru the water than in any other way. A roup infected fowl may communicate the disease to fifty or more other fowls in a few hours if all drink from the same fountain. The water pans should be washed every day and thoroly scalded once a week. Disinfect the water with permanganate, using enough to make it a wine color.

If sickness appears in the flock, establish a rigid quarantine. Whether you intend to treat a fowl or kill it, no matter how simple the symtoms of disease may appear, remove it from the flock as soon as possible. It will generally be found advisable to kill all fowls that show any symptoms of an infectious disease. The treatment of poultry diseases is not often advisable because the value of the fowl is relatively small and the cured chicken is always a menace to the flock, since it may be a chronic carrier of the disease without showing any symptoms.

All dead fowls should be burned. If burning is not possible, bury them deep enough that the decaying carcass will not be dug up by dogs or uncovered by fowls.

The majority of poultry diseases are so easily prevented that their appearance in a flock is evidence of carelessness and neglect on the part of the poultryman in charge. Every poultryman, if he is to make his work a profitable proposition, should endeavor to prevent the appearance of any disease in his flock. This may be accomplished if only fowls that are constitutionally strong are allowed in the breeding pen and this constitutional vigor maintained thru constant selection and by paying close attention to the observance of a few simple rules of sanitation and hygiene.



CENTRAL POULTRY HOUSE, 48 x 120 FEET, AT WOODBINE FARM, CRAWFORD CO., PA.

POULTRY HOUSE AT WOODBINE FARM

In the summer of 1912 we built the large poultry house shown in the illustration, size 48 by 120 ft., capacity 2000 White Leghorn hens. There is a driveway thru the center and perches are arranged along the north side of the drive-way. The house faces the south, has a natural ground floor and has concrete foundation all the way around; which foundation is four inches thick and one foot above the surface of the ground. The building cost of the house was approximately $450. All material was purchased and labor employed, the hauling and miscellaneous work being done by farm laborers.

The object in building this large house was to test out some ideas which are the outgrowth of many years of successful poultry work. The house is not satisfactory as originally built and will be re-arranged inside. The building is located near the center of the farm and the birds have free range, as have all the 2,500 hens at Woodbine Farm. Many persons are astonished that we can give the birds free range and grow farm crops in close proximity to the poultry buildings yet as a matter of fact we do this year after year. A crop of wheat was grown on one side of this building and a crop of corn is growing on the other side. It all depends on knowing how to feed and handle the fowls wisely.—J. T. Campbell, Crawford Co., Pa.

EXPERIMENTS IN INCUBATION

Under natural conditions eggs not promptly incubated are warmed daily by contact with the body of the hen. In order to determine whether or not this preliminary warming has any effect on the vigor of the embryo, 2 tests were made recently by the Pennsylvania Station with incubator hatched chicks. In the first test the percentage of chicks hatched from all the eggs was as follows: Not warmed, 52 percent; warmed 1 hour daily, 63.4 percent; warmed 2 hours daily, 47.2 percent. In the second test the results were as follows: Not warmed, 20 percent; warmed 30 minutes daily, 20.4 percent; warmed 1 hour daily, 29.6 percent. From these results it is thought that there is some advantage to be gained from warming the eggs which are to be held for periods longer than 10 to 12 days before the regular period of incubation begins.

The effect of placing eggs in different positions in the incubator was also tested. No serious disadvantage resulted from standing the eggs on ends for 3 days, but eggs laid flat and turned twice daily gave better results than those kept in any other position. There was a distinct disadvantage in leaving eggs flat without turning. Eggs which had been held at different periods from 10 to 30 days were incubated, and the results indicated that there was little loss in the hatchability of eggs kept for from 16 to 18 days before setting.

Handling Brood Hens.—In an address at the recent "Get-together" dinner of the Essex county poultry association, of New Jersey, Charles D. Cleveland, secretary of the Madison Equare garden show, in explaining the art of handling brooding hens, dissected his "colony-coop" method. Taking a yard of 175 setting hens, the number is separated into three groups or pens. The setting hen is placed on the eggs and shut in a coop with only the head protruding thru slats. Every two days, the speaker asserted, was an excellent interval to adopt in allowing each hen fifteen minutes' recreation from the coop. Boxes are placed on top of each other when insufficient space is allowed in the yard. Mr. Cleveland advocated milk instead of beef scrap for the feeding of chickens.—D. T. H.

PENNSYLVANIA FARMER SELLS HOGS

Jay Milum and Son, Sycamore, O., write: We must thank you for the good returns from our hog advertisement in Pennsylvania Farmer. We have sold 34 head with the advertisement and will be with you again next Fall.

This Key to Poultry Profits FREE

OLD TRUSTY

THIS famous Old Trusty book has started half a million people making poultry profits. The Johnsons offer no untried experiment in chicken raising. If the Old Trusty isn't all that's promised we trade back. An

OLD TRUSTY

is guaranteed for 20 years.

Makes big hatches in coldest weather. Shipped on 90 days' trial. Order shipped day received. Write for Big Free Book.
Johnson, Incubator Man
Clay Center, Neb.

$5.00 Less Than Anyone Else Could Sell It For

Does it Ever Occur to You

that the success of poultry raising depends entirely upon the Meat Scraps you use!

Maurer's Quality Meat Scraps

are pure and sweet and carry the recommendation of the foremost breeders. A postal brings you a valuable booklet. Sold direct from 10 pounds to any quantity.

MARTIN R. MAURER,
Box E. 112. Elizabeth, N. J.

LEE'S LICE KILLER

Germozone, Louse Powder, Egg Maker and other Poultry remedies have a successful reputation of twenty years behind them. They have brought success to thousands of poultry raisers and will to you. Lee's big "New Poultry Book", "Reading Symptoms of Disease" and "Poultry Pointers" free from all Lee's dealers, or write direct. The New Mandy Lee Incubator is a real automatic hatcher. Write for catalogue
GEO. H. LEE CO., 993 HARNEY ST. OMAHA, NEB

Tells why chicks die

J. C. Reefer, the poultry expert of 1605 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every batch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

FEED KEYSTONE POULTRY FOODS

to all kinds of fowls, pigeons, chicks. Watch 'em thrive. Clean and appetizing. A properly mixed and balanced food for building flesh, bone and muscle without waste. Makes hens lay. Keeps poultry in "pink of condition." Cheapest food in the long run. *Ask your dealer*—accept no substitutes. Write today for free circular describing foods, seeds and appliances
TAYLOR BROS., 40 Market St., Camden, N. J

Give Your Chickens Teeth

MAKA SHEL FOR ME

Feed Grit—give the chicken something that grinds the grain in the crop and prepares food for proper assimilation. Oyster shells and bone are too soft and won't do what Maka Shel Grit will do. Maka Shel Grit will increase weight and egg-laying, by helping the chicken digest all she is fed. 200 lbs. for $1.00 f. o. b. cars. $10.00 per ton freight paid. Edge Hill Silica Rock Co., Box V, New Brunswick, N. J.

F. P. C. CHICKMANNA Introduced 1884

The Original, First Offered, Leading Special 10 Day Food
Starts Chicks, Turkeys, Pheasants Healthy
5 lbs feeds 75 chicks first week. They thrive wonderfully on it. Send for special introductory offer & [illegible] supply Price List
F. P. CASSEL & SON SOLE MFRS Lansdale, Pa.

MacKellar's Charcoal

For Poultry is best. Coarse or fine granulated, also powdered. Buy direct from largest manufacturers of Charcoal Products. Ask for prices and samples. Established 1844. MacKellar's Mills, Peekskill, N. Y.

DRESSED POULTRY & EGGS WANTED

also Fresh Killed broilers and squabs.
Full Prices and prompt returns.
ARTHUR H. BONSOR,
Reading Terminal Market. - Phila., Pa.

Ship Your Potatoes Now.

Nearly half of 1913 crop is yet in farmers' hands. Prices are good and we see no reason for high prices in the Spring. All inquiries promptly answered.
GIBBS & BRO., 325 North Front St., PHILADELPHIA.

POULTRY EGGS CALVES

Dressed meats, nuts and butter. Shipments solicited by JELLIFFE, WRIGHT & CO., 284 Washington St., and West Washington Market, New York.

EGGS, Poultry, Butter Wanted

Top prices and quick returns guaranteed.
Estab. 1880 A. J. M. Murdoch & Co. 102-4 Vine St. Phila., Pa.

Parcel Post Egg Boxes NEW FLATS AND FILLERS.
Send 10c in stamps for same.
N. R. BRUNNER 45 Harrison St., New York

14 Prairie State Universal Hovers

with regulators For Sale 1913 Model $4.25 each
Just half price. H. A. BACON, Berwyn, Md

Barred Rocks I have a combination of some of the best strains. Pullet line only. Eggs $1 per 15, $5 per 100. Send for mating list.
CHAS. T. DOWNING, R. D. [illegible] West Chester, Pa.

FAWN & WHITE Indian Runner duck Eggs and Single Comb White Leghorn Eggs, 20 Eggs for $1.50 Parcel Post. Bay View Poultry Farms, Shelltown, Md

20 EGGS $1.00 Leading Varieties Prize Poultry Pigeons, Hares, etc. Booklet free. Illustrated Catalogue 10c, F. C. WILE, Box 18, Telford, Pa

15.95 AND UPWARD ON TRIAL.

AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION to send fully guaranteed, a new, well made, easy running, perfect skimming separator for $15.95. Skims warm or cold milk; making heavy or light cream. The bowl is a sanitary marvel, easily cleaned.

Absolutely on Approval.

Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address:

AMERICAN SEPARATOR CO. Box 1062 BAINBRIDGE, N. Y

The Proof of Any Silo is in Its Silage

If your silage is perfectly cured, succulent and palatable, free from mold, uniform from center to circumference, untainted by foreign matter, then you have a good silo. The

INDIANA SILO

assures you of these results. Let our silo help you. Our Early Buyers' Proposition will save you many dollars in the purchase of an INDIANA SILO. In quality and economy of service it stands without a peer.

"Silo Profits", the "Watch-Tower" story and our new catalog all free. Address nearest office.

THE INDIANA SILO CO., Union Bldg., Anderson, Ind. Kansas City, Mo. Exchange Bldg. Des Moines, Ia. Indiana Bldg. Fort Worth, Tex. Live Stock Ex. Bldg.

Only $2 Down
One Year to Pay!

$24 Buys the New Butterfly Jr. No. 1. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 5 1-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

ALBAUGH-DOVER CO. 2197 Marshall Blvd. CHICAGO

HOLSTEINS

Three grandsons of King of the Pontiacs, one year old and ready for service. Individuality the very best. One is dark, two light colored. Sire is a son of King of the Pontiacs from a 25-lb. three-year-old, her dam a 22 lb daughter of Hengerveld De Kol and full sister to the dam of our 37-lb cow. Dams of these bulls all have official records and splendid backing.—Must be sold before February 23rd.

Send for pedigree and price.

STEVENS BROTHERS CO., Liverpool, N. Y.

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We have a few choice registered Guernsey Bull Calves for sale from A. R. cows by prize winning bulls. Our herd bull was Grand Champion at Trenton Fair last fall. We also had Grand Champion Guernsey cow.

Write for sale list with breeding and description or better yet pay us a visit.

ELLENWOOD FARM
R. D. 1. HATBORO, PA.

High-Grade Cattle—High-Grade Farmers

The pure-bred **Jersey Cow**

is one of the most high-grade animals ever developed by man. The high-grade farmer demands the high-grade cow. No breed equals the Jersey for the economical production of high-grade milk and butter. No breed equals the Jersey for intensive farming.

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THE AMERICAN JERSEY CATTLE CLUB
324 W. 23d Street, New York

WORLDS CHAMPIONS Ayrshires Berkshires Our cows made 23022 lbs. 4 per cent milk in one year. Our herd average is 11868 lbs. The large prolific kind. We won grand champion boar and sow at International. Foundation stock for sale. The best is cheapest. PENSHURST FARM, NARBERTH, PA.

Jerseys—blood of Sultana's Oxford Lad, Golden Fern's Lad, Eminent. Calves, both sexes. ... W. Funk Allentown, Pa

Holstein Friesian Cattle. Royal breeding. Get A. R. O. bull calves. Write HOME FARM, Center Valley, Pa.

Registered Jersey Cattle and Single Combed Buff Leghornchickens. Eggsfor hatching. $1 per 15. J. W. Reabuck, Rt 7. Danville, Pa.

Improvement of Permanent Pastures.---No. II.

By JOHN H. REISNER, Cornell University.

Essential Qualities of Pasture

Every good pasture should possess certain essential qualities, and the best pasture would be one that contained them all in right proportions. First, there should be a quick growth in spring so that green pasture for the dairy herd may be early available; also to hasten the drying out of the soil so that cattle can be run on it without injury to it. Second, there should be a large production of green matter. Cattle should be able to satisfy themselves without having to graze ten to twelve hours each day and cover the distance of the meadow several times in doing it. Third, the grasses must be palatable, nutritious and digestible. This may appear axiomatic, but it is not. There is wide differences in the palatability of our different pasture grasses. Some are much better than others, and only the best should be used. Fourth, there should be a continuous supply of pasture thruout the season. It is difficult to get any one grass that will give this condition. The meadow should therefore contain grasses which have different habits of growth; that is, come on at different times during the summer, so that a supply of green pasture may be available at all times. This is an extremely desirable quality, and which few of our meadows possess. Finally, the turf should be such as will resist injury from tramping and close grazing. These five qualities combine to make up our ideal pasture.

GOOD NATURAL PASTURE LAND OVERGROWN WITH BRUSH.
Kentucky Bluegrass is indigenous to this region and would transform the plot to good pasture.

Methods of Improvement

How to improve the pastures that we are now using and have at hand is the real problem with which we are chiefly concerned. The classification of these lands already given indicated the diversity of the methods needed to meet such diverse conditions. For the most part then we shall be compelled to be content with the consideration of principles and methods, rather than make specific recommendations. These must needs be largely determined by conditions of seeding, soil and surface features and the results desired.

Immediate Improvements

These improvements are usually preliminary but are essential to further care, and will be discussed first. They are usually the least expensive and practically always show marked results. The first is to rid the pasture of all weeds, brush and trees which are not to be used for shade trees. This can be done by grubbing, firing or pasturing with goats. Excellent grazing lands can be made to produce which otherwise are only a burden to the farmer. The practice of pasturing with goats to clean up the weeds, brush and to kill the stripling trees can be profitably managed. They not only save the cost of labor, but are an increasing source of income themselves. I have seen hundreds of acres of pasture land reclaimed in this way and with profit to the farmer.

Another method of improvement which should be practiced much more than it is is mowing the pasture, first to cut down the weeds before they go to seed, and secondly to get rid of the over-ripe grass. Very often the weeds can be controlled in this way except those that reproduce by means of underground stems. In this case continuous grubbing is the only sure method of eradication. Mowing the ripe or dry grass not only rids the pasture of food that the cattle will not eat in most cases, but invigorates a new growth of green leaves at a time when otherwise there would be little good grass. It is not an unusual sight to see whole meadows "gone to seed," with the consequent deterioration if not an almost total loss of the area for grazing purposes. More general mowing of the pasture lands when mowing is needed would result in more available pasture during harvest time or shortly after when there is often a lack of green grazing.

The next method to be considered is drainage. This of course applies to low, wet, swampy and poorly drained lands. Undertiling is perhaps the most satisfactory method, but it is expensive and the results to be obtained may not warrant the expenditure of money. Open drains are not wholly desirable in grazing lands, but they may often be used to good advantage in reclaiming these lands. One thing should be noted in reference to these lands, that when drained and consequently aerated, they can be made the most valuable pasture lands of all. These soils usually contain large amounts of organic matter and nitrogen, causing luxuriant green growth.

The fourth of these temporary or immediate improvements is management and care in grazing. Grass lands, as already stated, should not be grazed too early, too close or too late. One week of too early grazing may injure the pasture for the rest of the summer. The demand for green feed is usually great at this time of year, and the tendency is to begin to use the grazing lands as early as possible. It is a dangerous practice. The land should be dried out enough so that tramping will not cause puddling of the soil, or too great packing. This not only destroys much grass, but injures the roots as well, with a consequent injury to the pasture as a whole. Further, the plant should be given a chance to manufacture and elaborate food both for present and future use. Early grazing prevents this, and leaves the plant in less vigorous condition. Too close grazing has the same effect on the vigor of the plant as too early grazing, but in addition may cause a loss of organic matter that would otherwise be added to the soil, an increase in evaporation, and, if the temperatures are high, a positive injury to the roots. Close grazing and lack of good vigorous green growth are usually associated with the dry summer periods.

While it is quite impossible to forestall the effects of dry hot weather in summer, we can prevent injury to the grass seeding by not allowing too close grazing. We must manage our grass lands with the future in mind rather than that they should afford a scant sufficiency of pasture for a few weeks when green feed is scarce. Late pasturing is injurious when it causes unfavorable condition for wintering. Top dressing of manure is so seldom applied, or in fact anything else that would act as a protective covering during the winter months. For permanent pasture grasses, nature will supply this necessary protection in the form of green material, but when we rob the lands of even this by late grazing, we make the conditions of maintenance by so much the more difficult for the plants.

In addition to the management and care in grazing, these lands should be rotated. By grazing but one-half the pasture, the other half is given a rest and chance to get a new start. There is no injury from tramping. Plant growth can go on unhindered. Production of green matter is stimulated. Thus the two pastures can be used in rotation, more green feed being supplied to the cattle and more easily accessible. Much in the way of permanent improvement can be done by careful management in grazing and by proper rotation of the pasture lands.

Adding Fertility to the Land

Improvement may not be possible without the addition of outside source of fertility. The land may be so depleted of mineral plant food that plants can no longer grow. The land may lack organic matter in an actively decaying condition, so that the mineral elements are too slowly soluble. If low lying and with poor drainage, or lacking lime the soil may be acid, and occupied with weeds or by plants that do not have a high pasturage value. It will be necessary then to correct these conditions before the improvement we are looking for is possible. Nitrogen can be added by growing clovers, either red, alsike or white. Every pasture should contain some clovers. White is perrenial and few good pastures are without it. Red and alsike must be sowed at least every two years. Alsike clover grows on wetter and more acid lands than red, so that on poor soils it is best to sow them in mixtures rather than alone.

The next way to add fertility is one that may be objected to by some on the ground that it lessens the quality of the pasturage, or at least the cattle show a preference aginst it. This is by the application of barn yard manure. Probably nothing can be added to the grazing lands that will improve them and the grasses grown on them as the application of barnyard manure. Not only are the manurial food elements, nitrogen, potash and phosphoric acid returned to the soil, but there is a direct addition of organic matter, the effects of which in the process of its decomposition with the soil will be evident for a long time. Such a method may be particularly valuable for treating hill tops on which the sod is running out.

The third suggestion in this connection is the addition of lime, which affects the fertility indirectly, chiefly by correcting acidity, improving physical conditions and by releasing plant food. The application of this method and the one following will receive further consideration later on.

The last method and the one which should be resorted to last of all and not without some assurance of its success, is the direct application of commercial fertilizers, either complete or incomplete. Nitrate of soda stimulates plant growth but is expensive. The increased yield in green feed must more than offset the cost of the application. The application of nitrogen, phosphoric acid and potash in a complete fertilizer may be the most profitable depending on soil conditions. We should remember that mineral fertilizers should be a last resort, and not until drainage, lime and manures had failed.

SAME KIND OF SOIL AS IN THE ILLUSTRATION ON OPPOSITE PAGE BUT CLEARED AND SEEDED TO BLUEGRASS.

ACCURACY OF MILK TESTS

Need of Regulation of Equipment and Testing

Is there any law in Pennsylvania that compells people who have charge of the testing in creameries and shipping stations to be licensed? If not, why shouldn't there be? A law of this kind would bring about more accurate and reliable tests of milk, which would not only protect the producer, but the creamery as well. Too much can not be said about this testing business. For example, I have had the milk from one of my cows tested at four different places and get tests ranging from 3.25 to 4.30. Is this dishonesty, ignorance or what? It seems to me that the farmers suffer more than necessary by these methods. Why should this go on? Who is at fault?—C. D., Schwenksville, Pa.

There is no law in Pennsylvania at the present time that requires that testers of milk and cream have a license. There should be such a law. Many of the states of the Middle West have, for a number of years, required that men who buy milk and cream on the butter fat basis must have a license; must pass an examination showing that they are competent to make such tests. The states of Minnesota and Iowa have learned by experience that this law is a good one. At the last session of the Indiana legislature a similar law was passed. Nearly all of the New England states have, for many years, had a law that required that all glass-ware used in Babcock test determinations be first sent to the Experiment Station to be tested. In Connecticut the first year that this law was in effect most of the glass-ware was condemned; the second year only 1 percent was found to be inaccurate, while the third year no inaccurate glass-ware was found. In Maine when this law went into effect, in a single lot of 60 test bottles 33 were found to be inaccurate, the error being from 3/10 to 1 percent. The importance, therefore, of having glass-ware tested is obvious.

It is also claimed by many that because of our neighboring states having such a law the best glass-ware goes to them, while the inaccurate glass-ware is sent to Pennsylvania where there is no law with reference to glassware. There are, however, a few companies that do guarantee their glass-ware to be accurate.

To answer your question as to whether or not a variation of 3.25 to 4.5 in test of milk from a single cow is "dishonesty, ignorance, or what," I must say that on different days the same cow may vary as much as 1 or even 2 percent. Excitement, the cow being in heat, and many other conditions may cause the fat content to vary, but if samples taken carefully from the same milk vary as much as 1 percent it shows that your glass-ware is inaccurate, or the test has not been properly made. It is possible to have samples check within 1/10 of 1 percent if they are properly handled, but it must be kept in mind that fat in milk is not in solution but suspension, and it is a very easy matter to take samples from the same milk and get different percentages of fat in them.

A law requiring the testing of glass-ware, and requiring that all users of the Babcock test have a certificate of proficiency for such work is desirable from the standpoint of the producer as well as the handler of milk. The writer has advocated this for a number of years.—Prof. C. W. Larson, State College, Pa.

DE LAVAL Cream Separators are not the mail order or agricultural implement kind

THERE ARE SEVERAL KINDS OF cream separators, but De Laval Cream Separators are of a kind that puts them in a class by themselves.

DE LAVAL CREAM SEPARATORS are made by the best engineers, with the best equipment, from the best materials, by the best workmen, and in the best shops of the kind in the world, all devoted solely to the production of the best cream separator.

THEY ARE NOT THE KIND OF SEPARATORS mail order houses contract for wherever they can be made cheapest, nor the kind that agricultural implement concerns manufacture along with corn shellers, plows, mowers, reapers, threshers, gasoline engines, cow milkers and the like, none of which begins to compare in mechanical quality or refinement with what the cream separator should be.

DE LAVAL CREAM SEPARATORS are the kind 98 per cent of the creameries use, where any loss in quantity or lack in quality of product means business ruin, as it always has ultimately to every creamery that did not replace an inferior separator with a De Laval.

PRECISELY THE SAME KIND OF DIFFERENCES exist in farm as in factory separators and precisely the same reasons apply to the use of cream separators on the farm as in the creamery, though they may not make or break the farmer as they do the creameryman where the farmer has other crops and products upon which to rely.

THE DIFFERENCES BETWEEN DE Laval and the mail order and agricultural implement kind of cream separators are fully set forth and made plain in a De Laval catalog to be had for the asking, while the machines themselves best tell their own story placed side by side, and that every De Laval local agent is glad to afford any prospective buyer the opportunity to do.

If you don't know the nearest De Laval agent, simply address the nearest main office as below.

THE DE LAVAL SEPARATOR CO.
165 Broadway NEW YORK
29 E. Madison St. CHICAGO
50,000 Branches and Local Agencies the World Over

SARATOGA SILOS

Airtight, Round Doors, Swinging outward, strong and handy. Four sealing levers, no spoiling of ensilage, portable all steel ladder, best of everything fully guaranteed.

Write for free catalogue with testimonials.
THE SARATOGA SILO MFG. CO., Box M. Saratoga Springs, N. Y.

A Son of Windsor Hill ADRIAANTJE PAUL. A fine, straight, showy individual, nicely marked. Amos Vastine, Elysburg, Pa

LISTEN! Read This Twice

For five months starting February first I am going to make my New Special Proposition to every dairyman in this country on the New Genuine Galloway Sanitary Cream Separator. It's a combination offer. Its equal has never been made in the history of this country. I not only save you dealer's, jobber's and catalog house profits but I sell you a better machine and give you a bonus as well to try it, which shows my faith in my separator, my proposition and my plan. No such offer as I make on the class of separator I sell has ever been made.

The New Galloway Sanitary Cream Separator is made so good in my factory that I will send it anywhere in the United States without an expert to any inexperienced user for a ninety day free trial to test against any make or kind that even sells for twice as much and will let the user be judge, because it's the most modern—the most sanitary—the most scientific—the cleanest skimmer—the most beautiful in design of any cream separator made today and I have seen them all. Write me and I will tell you how to make money in the dairy business when the pastures are dried up in summer. I did it on my own farm and know. Get my proposition now. It's so good that no dairyman who owns two or a hundred cows can afford to be without it. All I ask you to do is to first get my proposition before you decide to purchase any cream separator of any make, kind or at any price. Just drop me a postal. Address

Travel 20,000 miles, look over every factory in the United States and all of the foreign countries—you won't find its superior at any price. Made in our own factory from finest materials on best automatic machinery, by skilled workmen, in tremendous quantities, all parts alike, interchangeable, and standard and sold to you for less money than dealers and jobbers can buy machines not as good in carload lots for spot cash.

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Feed Ensilage This Summer When Pastures Get Low

To secure the maximum results, stock should be fed green feed all the year round. Its succulence produces rapid growth and a heavy flow of milk. No other feed equals ensilage in succulence. It is as valuable and economical to feed in summer as in winter. It pays, then, to fill a silo for summer feeding. You will keep ensilage succulent and palatable all-the-year-round as the day the corn was cut, if you have a

Natco Imperishable Silo
(Patented)

Built of non-porous vitrified-clay hollow blocks; its glazed surface excludes air and moisture. The two dead air spaces protect contents from heat and cold. Each layer of blocks is reinforced by continuous steel bands.

Weather Proof—Decay Proof—Vermin Proof—Fireproof

The Natco Imperishable Silo will last for generations—any mason can erect it—never needs painting—walls will not warp or shrink—no hoops to tighten—no continual repair bills—the first cost is practically the only cost. The Natco Imperishable Silo has a survival value unequalled.

FREE SILO BOOK. Full of information about ensilage and summer feeding. Describes completely the Natco Imperishable Silo. Write today. Ask for catalog Q.

National Fire Proofing Company
Philadelphia, Pa.

International Special Dairy Feed

GAINED TWO QUARTS EACH DAILY

Mr. H. L. Gardner of Otisville, N. Y., has written us as follows:

"During the past two months I have fed three tons of International Special Dairy Feed to twenty head of cows along with ship feed and Gluten, using about six pounds of International Special Dairy Feed daily for each cow. By the use of this ration, my cows produced two quarts of milk more per day than when they were fed a mixture of Gluten and ship feed. I could not get your feed afterwards and fed dried Brewer's Grains in its place and my cows dropped one-half can per day."

International Special Dairy Feed is also extensively used as an entire grain ration and used in this manner will produce more milk at less cost than can be obtained from any other method of feeding.

Ask your dealer for International Special Dairy Feed. If he don't keep it for sale, then send us your dealer's name and address—we will arrange to supply you. C-5

INTERNATIONAL SUGAR FEED COMPANY
M. W. SAVAGE, PRES. MINNEAPOLIS, MINN.

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YOU buy only once in a lifetime if it is a "Green Mountain." All woodwork below roof is dipped in pure creosote oil preservative. Many other points of superiority described in handsome catalog, sent free. Also ask for free booklet in which Prof. Esten, of Conn. Agricultural College answers such questions as, "What is Silage?" "Why is it the best Cow Feed?" "Why does it keep and not spoil in a good silo?" Write today for Green Mountain literature.

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345 WEST STREET, RUTLAND, VERMONT

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PENNSYLVANIA FARMER
AGRICULTURE THE KEYSTONE OF NATURAL PROSPERITY
ESTABLISHED 1880 PUBLISHED WEEKLY

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Philadelphia, Pa., March 21, 1914.

Pennsylvania Hay Crop

Statistics from the State Department of Agriculture on hay production and prices, published in these columns last week, give some interesting figures on the state's greatest crop. For many years agricultural authorities have discouraged hay production from the standpoint of effect upon soil fertility. This has been particularly true in the case of timothy, which, because of its meagre root system and slight return of humus to the soil, proves a heavy drain on soil fertility in a series of years. Clover is not objected to because of its power to store up nitrogen in the soil and because, from its dying out the second year, it is not grown continuously on a single field as timothy often is. But even with clover the advice is frequently given to feed it on the farm or turn it back to the soil in some other way. In many communities the practice of selling hay of any kind has come to be regarded as wasteful and contrary to best farm practice. But in this, as in many other cases, the best general farm theories are subject to exceptions. The many large cities of the east create a demand and establish a price for hay which make hay production profitable; and the figures show that the farmers of Pennsylvania are taking advantage of these prices and have made hay the state's biggest crop. It is estimated that the acreage last year reached a total of 3,141,000, from which there was produced a total of 4,146,000 tons, bringing in $61,775,000. From the estimates given it appears that alfalfa has a wide margin on timothy and clover in gross returns per acre. The average price per ton of alfalfa for the state was $17 and the average yield was 3 tons per acre, giving an average gross return of $51 per acre. But while all of the 67 counties of the state raised clover and timothy, only 20 counties raised alfalfa. Timothy is credited with an average yield of one and one-half tons per acre, and the average price for the state was $15 per ton, making an average gross return of $22.50. The state average price for clover was $13 per ton and the average yield, one and one-half tons per acre, making the average gross return $19.50 per acre. When the cost of production is considered, particularly where farm labor is scarce and high priced, these gross profits indicate that hay must continue to be one of our leading crops. The problem is to so manage the farm rotation as to permit of hay production and still conserve soil fertility. Those who are growing clovers and alfalfa will have no worries on this score and those who are growing timothy are getting the desired results with short rotations in which timothy is always seeded with clover and the seeding standing only two years.

Berkshire Association

Every breeder of Berkshire swine in this state will be interested in the work of the newly organized Berkshire Breeders' Association. This association promises much for the development of the breed in this state and thruout the East, as it is starting with a strong staff of officials that is entirely free from entangling alliances with sets or classes of breeders, with sections and with individuals. The officers appreciate the needs of a strong breed association and the need of working toward a well-balanced general development of the breed among the actual, practicing farmers in all parts of the state. A particularly gratifying move is their determination to encourage the development of the utility or pork-barrel qualities of the breed rather than the fancy show points. Many breeds of farm live stock have suffered thru the exaggerated importance placed upon show-ring features. So far as the farmer is concerned, the value of the animal in any class or breed is determined solely upon the market value of itself or its products. He will use a breed only so long as the market quality makes it profitable for him to do so. As the farmer trade forms the backbone of the breed's existence, the breeders who permit themselves to lose sight of utility in their race for fancy points soon find their stock losing in popularity and depreciating in value. The Berkshire association is starting its work with the purpose of making the breed the best for all by making it the best for the farmer in the production of pork under eastern farm conditions. In this as in all of its efforts it deserves the support and co-operation of every Berkshire breeder of the state. The breed is already a popular one, there being more Berkshires registered with the national association from Pennsylvania in the past year than from any other state in the union. The state association is now prepared to push its organization and get down to constructive work in every county in the state. The brief note on page 14 of this issue outlines plans for solid constructive work that should appeal to all Berkshire men.

Milk Testing Equipment

Every dairy reader who sells milk or cream on the butter fat basis will be interested in the query and reply on page 9 of this issue. The query asks a number of questions which have no doubt occurred to many dairymen at different times. The reply reveals a condition that ought to have the attention of every farmer. The government and the various states exercise the most careful supervision of standards of weights and measures by which most products are bought and sold. The Babcock test is a standard by which hundreds of thousands of dollars worth of butter fat is bought and sold every year, and the equipment used in this test is not standardized and there is no specific legislation affecting it. The figures presented by Professor Larson showing that 55 percent of the glass ware investigated at certain times have been found to be inaccurate reveal a startling condition of affairs which affects every dairyman and every creamery. Farmers spend large sums of money and give great effort to increase production of butter fat by single pounds per cow. They spend money in the purchase of the most efficient separators and other equipment to conserve every particle of butter fat produced. Yet, after this care and expense, the standard of measurement by which this commodity is sold is liable to and even known to permit variations which may work serious injustice to either the buyer or seller, or both. There is no good reason to believe that the inaccuracies in the equipment favor the creameries or the purchasers more often than the sellers; but as the purchase of the equipment and its operation is in the hands of the creameries, there is at least a possibility of their selecting such equipment as will insure them against loss. The fact also that some states bar inaccurate equipment from use within their borders increases the probability of defective equipment being sent to states where there is no effort at control. This is a matter which should be fully discussed by dairymen. We shall be glad to hear from readers who have had further observations on this subject.

STATE CAPITAL NEWS

Demonstration Work. — Pennsylvania's orchard demonstration work is to be resumed next week in twenty counties under direction of the state zoologist, to be kept going until the trees bloom. The work has been retarded by the snows. Information will be given farmers and fruit growers as to what to expect from trees nipped by frosts. Sample infested twigs are to be passed upon at the demonstration orchards. The experts have been specially instructed concerning frost.

Beef Production.—Considerable attention has been given to the subject of beef production due to the recent bulletin on the subject. In some counties farmers have written that available land is not sufficiently large to raise cattle on an extensive scale; and in other sections it is claimed that calves and milk offer quicker returns than the raising of steers. However, the fact that beef production will bring down the cost of meat is being realized and there is a disposition to return to the plan of raising several steers a year for market. The state has offered to give advice on pasture lands and cattle raising and bulletins on the subject will be prepared. One of the first steps toward creation of pasture lands is the fencing in of and giving them proper attention.

Rabies.—The most extensive outbreaks of rabies known in recent years have been reported to the State Live Stock Sanitary Board in the last few weeks and two large quarantines have been put into effect, one in Delaware and Chester counties and the other in the vicinity of Lewisburg. Another is in force at Bloomsburg. These outbreaks have been traced to an unusually large number of infected dogs, which have bitten cattle and dogs and caused no end of trouble. The quarantine requires that all dogs in the districts be muzzled or penned up for 100 days, dogs at large to be shot on sight. In rural districts the farmers have given valuable help in running down wild dogs.

Cattle Dealer Fined.—State authorities are proceeding vigorously against cattle dealers violating the quarantine laws on cattle. A man who bought 8 diseased cows in Maryland and shipped them into this State has been indicted. Had these cows been used for milking or sold as food the danger of infection would have been widespread. This is the fifth arrest in a few months.

Coal, Meters, and Telephones.—The new Public Service Commission has had a large amount of business in the form of complaints, which will govern cases thruout the whole state. A wholesale overhauling of charges for hauling coal in the eastern end of the state is in prospect and attention is being given to a general set of rules to govern all kinds of meters, requiring companies to adopt standards and tests. Telephone rates are being investigated but the process is a slow one.

Barn Fires.—The state Fire Marshal says that while many barn fires are due to incendiaries, fire hazards can be lessened by cleaning up accumulated rubbish. Watching wires and prohibiting smoking are equally important as well as general carelessness.

Compliments On Report.—The Department of Agriculture has been receiving commendation on the plans of its crop report for this year, worked out with a view to securing accurate information. Printed pamphlets will be ready in a few weeks. Meanwhile steps to secure early reports for 1914 are being taken.

May Revise Gypsy Bill.—There are signs that the anti-gypsy bill which received so much attention a few years ago in the legislature may be revived at the next session due to complaints about gypsy bands. Last fall a number of thefts were reported and spring may bring more of these. The plan of the last bill was to require each band to take out a license, altho that was more a form than anything else, the main object being to get lists and descriptions of members of each band.

Institutes End.—The close of the farmers' institutes was marked by large attendance, and efforts are now being made to get reliable figures about the number of people attending the sessions. It is believed the record will be large, in spite of weather conditions.

Seed Inspection Work.—As an indication of the way in which grass seed dealers are seeking to avoid arrest for selling seeds not in accord with the new state standard, 250 applications have been made for analyses by such firms. All these applications have come in within two months. Public sampling will begin in April.

Fish Bulletin.—The Pennsylvania Department of Fisheries has received for distribution Bulletin No. 10, "What an Acre of Water Will Do," intended for the encouragement of fish raising by the farmer.—Hamilton, Harrisburg, March 16, 1914.

NEW JERSEY FARM NEWS

Damage From Snow Storms.—The recent heavy snow storms did thousands of dollars of damage to the farming sections of the State. Unable to get to the creameries and milk stations, many dairymen were compelled to throw away their accumulation of milk. Others made their milk into butter which found ready sale in near-by towns later on. Wild game of all kinds suffered from the severe weather. Local game wardens, shooting clubs and farmers, cleared away the snow at points in the fields and woodlands and scattered grain for the birds.

Road Notes.—There is great agitation over the state on the matter of road construction. The present roads have become so smooth that it is necessary to have a horse sharpened in order that he may travel upon them. State Road Commissioner Stevens favors roads with a hard strip in the centre for motor cars and earth on the two sides for horses, the earth to be hardened with crushed stone. With this type of road when the frost is coming out of the ground the earth gets soft and the traffic has to use the middle of the road. Suitable surfaces for motor traffic, in order to afford good footing for horses, must be kept low in crown and grade; but this involves considerable expense. Many roads have become practically impassable for horses, since the recent storms. These roads had been laid after due inspection of material and were considered at the time the best that could be made. Those who have the building of roadways in charge will probably let the present roadbed remain as it is, and cover the surface with some material that will make a firm footing for horses. A war is waging between the State road department and the taxpayers' associations of Sussex county. The former insists that all the grades in the new roads now in process of construction shall be 5 percent grades, while the latter declare that the topography of the county is such that to obtain a maximum of 5 percent on many of the roads increases the cost from 10 to 25 percent. A 7 percent grade has been requested and the request has been refused. It is now stated that the county will proceed with 7 percent grades, finding such to be cheaper than to construct 5 percent grades with State aid.

Farm Demonstration.—Prof. William B. Duryee, Jr., of Freehold, a graduate of the State agricultural college, has been appointed farm demonstrator for Monmouth county. Numerous petitions to the State farm superintendent, asking for a demonstrator for Union county have been received but the appointment has been deferred, altho the need of such a demonstrator is not denied.

Seed Analyses.—Many Burlington county farmers have been sending samples of all the seed they buy for spring planting to the state experiment station at New Brunswick, for analysis as to germinating qualities, freshness and standard of purity. The system of seed testing inaugurated by the state agricultural department is expected to save the farmers of that county alone close to $50,000. The state agrees to make the test free of charge and will publish lists of all dealers whose products fail to attain the proposed standard. Some farmers are also having analyses of fertilizers made as well. Farm Demonstrator H. W. Gilbertson, of Sussex county, has warned the farmers to get facts before buying fertilizers, feeds, lime, seeds and farm implements.

Poultry Notes.—Because of the high rent asked for the City Guard Armory at Easton, Pa., the Poultry Association of Easton and Phillipsburg is considering the advisability of holding its next annual exhibit at Phillipsburg. Last year the local association was instrumental in having a bill introduced in the Pennsylvania Legislature granting free use of armories for poultry exhibits but the bill failed to pass.

Miscellaneous Notes.—Miss Harriett Bradner, a graduate of an agricultural college, has been appointed farm superintendent of the New Jersey reformatory for women at Clinton. Delegates from many states attended the convention of the federation of Jewish Farmers of America at the Baron de Hirsch agricultural school at Vineland. For twenty years the school has been giving instruction in agriculture to Jewish youths and many of its graduates have taken up farming in South Jersey, acquiring considerable property. The Plainfield show was the first outdoor exhibition of the season in the vicinity of New York, and its passing will leave a void in the summer circuit. The Cape May county fair association has reelected the following officers for the ensuing year: President, Oliver Bright; secretary, J. S. Douglass; treasurer, A. C. Hildreth.—D. T. Hendrickson.

NEW YORK LETTER

Lights On Vehicles.—The Wilson bill providing for the carrying of lights on all vehicles on the highways except such as are propelled by hand has passed the legislature and been signed by the Governor. Its essential provisions are as follows: Every vehicle while upon a public highway or bridge shall display a light or lights visible from the front as a white light and from the rear as a red light, from one hour after sunset to one before sunrise. The law does not apply to hand propelled vehicles nor to any vehicle while upon any lighted street or highway if the street lights are maintained at a distance of not more than 500 feet apart or to a vehicle designed principally for the transportation of hay or straw while loaded with such commodities. But permission so to do must be obtained of the state commission of highways. The penalty for the violation of this statute is a $5 fine for each violation, to be recovered by the town or village in which such violation occurs.

Co-operative Association Organized. —The Dutchess county Co-operative association has just been organized at Poughkeepsie, among market gardeners for the purpose of selling produce direct to consumers. The ultimate plan is to have a city-owned market place for the use of all small truck farmers. Herbert G. Cottam is president and F. H. Lacy, of the Farm Bureau, is secretary.

State Fair Premium Money.—The state fair commission has $4,000 more at its disposal for agricultural premiums than last year. The premium list is being revised to comply with the increase in premiums. The appropriation for the racing features of the fair amount to $50,000 this year.

Motor Licenses.—A bill recently introduced to require every person driving an auto to have a license, opposed by all automobile associations in the state was lost in the committee of the Assembly.

Sunday School Corn Growing Contest. —The Saratoga County Sunday School Union will conduct a corn growing contest for boys who are members of rural Sunday Schools.

"Spotting" Fruit Cars.—The shippers of western New York are against the proposed charge for "spotting" cars costing 50 cents to $2 per car which they claim amounts to an increase of freight rates by so much. The matter is before the Interstate Commerce Commission. New York is said to be the largest fruit producing state in the Union, shipments of green apples grown here amounting to 25,000 to 30,000 cars a year, and of peach shipments from 3,500 to 5,000 cars.

More Milk Commissioners.—Governor Glynn has added more names to the state milk commission, as follows: F. W. Sessions, of Utica; Dr. Robert S. Breed, of the Geneva station; Dr. F. E. Fronesack, of Buffalo; Dr. S. G. Goldwater, of the health commission of New York City; Dr. L. R. Williams, deputy state commissioner of health; Stephen G. Williams, chairman of the New York milk committee and Charles E. North, secretary of the national commision on milk standards.

Capitol Notes.—The appropriation bill passed the Assembly March 12. It carries a total of $31,000,000 and withdraws all appropriations for the Efficiency and Economy and fire marshal departments. In this way the Republican Assembly hopes to get rid of these departments. The labor compensation bill has passed. The bill provides that no more than three of the commissioners shall be of the same political faith. There is talk of an extra session should the appropriation bill fail to pass the senate as it comes from the Assembly.

COUNTY NOTES

Harford Co., Md., (N.E.) March 7.—Warmer, after five weeks of severe winter weather. Live stock looking well. Many public sales, where live stock of all kinds are selling very high. Cows bringing $60 to $125; mules $300 to $450 pair. Hogs very high and scarce; brood sows with pigs bringing $50 to $75. The ground has been covered with snow for five weeks which looks well for a good crop of wheat and grass.—D. G. Harry.

Perry Co., Pa., (C) March 9.— Mild weather with plenty of snow. Stock is in medium condition. Sales are in progress, with stock bringing good prices. Winter wheat was covered since Christmas with snow, with scarcely any frost in the ground. Work is at a standstill. Most everybody is attending sales, to see what can be bought at a bargain.—S. B. Swartz.

York Co., Pa., (S.E.) March 10.—Cold weather with considerable snow. Beef cattle continue high in price. Horses selling for $175, to $275 per head; Potatoes, 80c bu; wheat, 95c bu; corn, 69c bu; apples, $1.50 to $2.00 bu; butter, 28 to 40c lb; eggs, 28 to 30c; tobacco, 8 to 10c lb. Farmers about finished stripping tobacco. Many now attending sales and getting ready for spring work.—Clarence D. Emig.

Chester Co., Pa., (S.E.) March 6.—Heavy snows and blizzard weather. Hogs, $11.50 cwt. Milk cows scarce and high. Wheat and grass well protected by snows. Eggs, 30c; hay, $15; straw, $8. Good horses high. Pigs are not numerous. Young heifers are high. Farm work in good condition and indicates a prosperous year. About 6 inches of snow on ground now.—Hayes C. Taylor.

Montour Co., Pa., (C) March 5.—Weather changing to warmer following extreme conditions, as low as 16 degrees below. Prices high. Beef, dressed 10 and 12c. Hogs, 11c; live 10c; chickens, 12@13c; butter, 38c; eggs, 35c; potatoes, 85c; corn, 70c; wheat, 92c; hay, $16; oats, 50c. Odd jobs being done. Caring for stock and opening roads. Wheat under snow. Severe weather on wheat just before last snowfall. —Benj. L. Diehl.

Bedford Co., Pa., (S.C.) March 9.—Cold and stormy, with considerable snow. Horses and cattle not in much demand and prices are lower. Wheat 90c bu; corn, 75c bu; hay baled, $15 ton. Winter grain has been covered with snow most of the winter, with very little frozen ground. Fruit prospects good, except peaches, which are badly frozen.—N. F. Richards.

Greene Co., Pa., March 13.—Weather has been very cold and blustery. Live stock scarce and very little changing hands. Horses about $25 cheaper than last year at this time. Cattle selling from 6 to 7½c lb; hogs, 8c; sheep, 5¼c; eggs, 30c doz; butter 30c lb. No plowing done since February 3. Farmers are waiting patiently for the ground to get into condition for the plow. Little work being done at present owing to the snow.—C. E. Addleman.

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This picture, recently taken, shows her condition and appearance at this time. Write Mrs. Taylor. *In treatment of this case plaster paris was not used.* The

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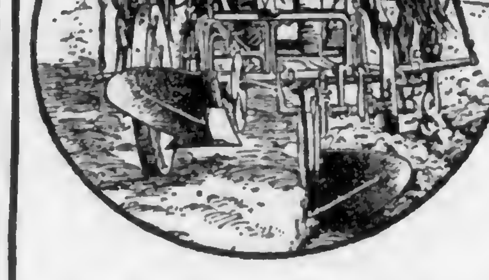

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2. Patent Auto Foot Frame Shift: Slight foot pressure swings frame and accurately locates plow bottom.
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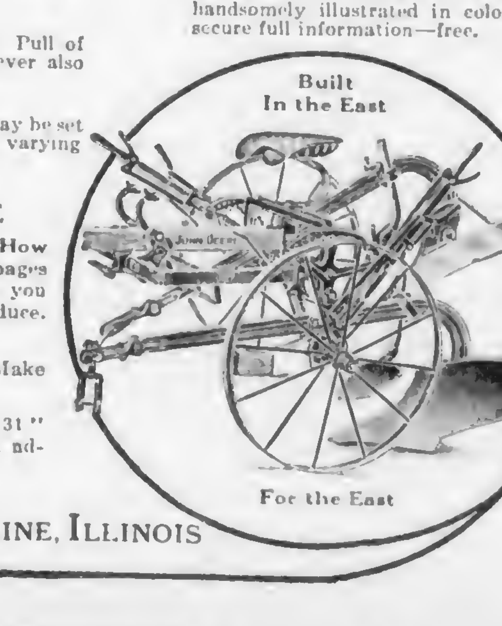

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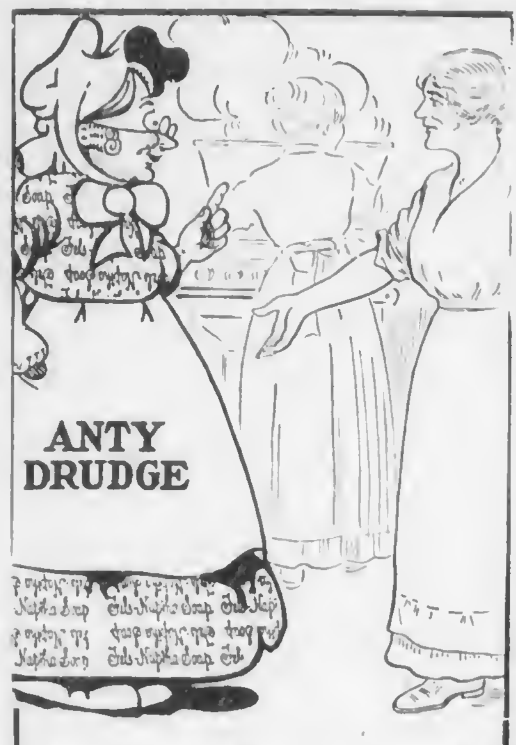

Mrs. Disagree—"Anty Drudge, what's this nonsense you told Mary about not boiling clothes? The idea of these young things telling their mothers how to wash! I settled her!"

Anty Drudge—"Well, you can't settle *me*, because I'm old enough to have some sense—so's Mary, for that matter. She's a sight more sensible than her mother about some things! I told her about Fels Naptha Soap and how easy it makes work."

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Use Fels-Naptha Soap and cool or lukewarm water. Soak the clothes for 30 minutes while you do your choirs. Then rub lightly, rinse and hang on the line. They'll be sweeter, whiter and cleaner than ever before, with less than half the bother, and in less than half the time.

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Better buy it by the box or carton. Directions are on the red and green wrapper.

Fels & Co., Philadelphia.

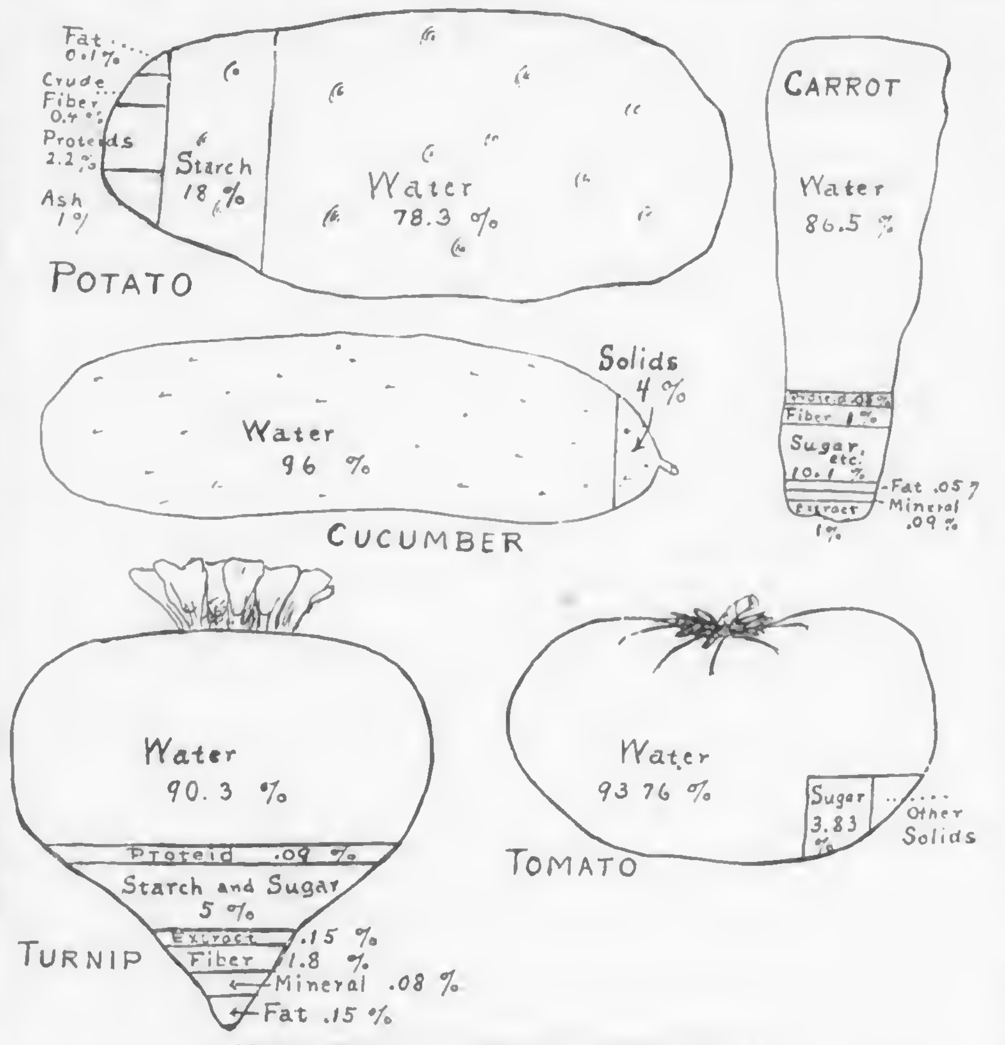
Facts About Foods.

By Mrs. C. W. FOULK.

Vegetables

Vegetables do and should furnish a large part of our food. They furnish salts and acids which are necessary to the body; they supply water; they give bulk to the food, which aids in digestion; and some vegetables furnish a large amount of nourishment, mainly in the form of starches and sugars.

Vegetables may be divided into two classes: First, the so-called "flavor" vegetables, those eaten largely because of their pleasing taste, such as asparagus, lettuce, radishes, spinach and cucumbers. While these vegetables are largely water and woody fiber and contain but little actual nourishment, they are nevertheless valuable foods because of the bulk they give and also because of the acids and salts which they contain. The second class or "nutritive" vegetables are used for their actual food value; they furnish sugars and starches, which are energy producers. In the case of beans and peas they contain protein or muscle builder. Among the nutritive vegetables are potatoes, sweet potatoes, peas, beans, beets carrots and parsnips.



COMPOSITION OF DIFFERENT TABLE VEGETABLES.

Fallacy of All-Vegetable Diet

An entirely vegetable diet is not a perfect diet, first because vegetables do not contain enough of the muscle forming materials (proteids). Peas, beans and lentils do contain a considerable amount of protein, but the amount so furnished is not sufficient. Another reason why a vegetable diet is not perfect is that vegetables contain so large an amount of water and woody tissue that in order to get sufficient nourishment the bulk would be too great. In Ireland where peasants live largely upon potatoes, many of them have the walls of the stomach and intestines permanently distended due to the large amount of food they must eat to satisfy their heat, energy and repair needs. This condition is so common that it has given rise to the name, "potato belly." Some strict vegetarians claim to be properly nourished on an entirely vegetable diet, but even in cases where they apparently seem to thrive on this one-sided fare, they are often found to lack resistence to disease, and break down under prolonged mental or physical strain. Most of the so-called vegetarians, however, use milk, eggs and cheese, which furnish the necessary protein to keep a well-balanced ration and repair worn-out muscle tissues.

The Potato

The potato, because of its keeping qualities, its good flavor, and the amount of nourishment it affords is the most popular vegetable. While the potato appears to be a very solid vegetable, it is in reality over three-fourths water. However, the potato contains about 16 percent of starch, which when compared with other vegetables, shows the potato to be one, if not the most nutritious of vegetables. Like the cereals it is an energy and heat producer, and if eaten in large quantities tends to produce fat. The potato will not produce muscle because of the very slight amount of protein which it contains. A potato in which the starch grains are well matured and are evenly distributed will, when thoroly cooked, be mealy and not soggy.

To Cook Potatoes.—A mealy potato is more easily digested than a damp and soggy one. Sometimes this sogginess is due not to the potato but the way in which it is cooked. When potatoes are boiled, they should be thoroly drained, then dried on the stove before serving. When baking potatoes, the surface of the potato should not be cut before placing in the oven because this allows the water in the potato to escape in the form of steam, and the potato, being a starchy food, needs the water to soften the starch grains. Just before removing from the oven, each potato should be stuck with a fork to break the jacket so as to allow the steam to escape, otherwise when the potato begins to cook the steam will condense and form water again, making the potatoes damp and soggy. Young or new potatoes are less easily digested than ripened matured ones, due to the starch being immature. Very old potatoes, especially those that have sprouted, are not so digestible or nutritious as those that have just been stored away for the reason that much of the starch and other nutrients have gone to develop the sprouts.

Sweet Potatoes.—The sweet potato has much the same composition that the white potato has, except that in the sweet potato there is more sugar and less starch. As sugar and starch have the same nutritive value, the sweet potato is much the same in food value as the Irish potato. The sweet potato contains a much larger amount of woody tissue or cellulose; this wood may often be seen in strings near the ends of the sweet potato. This cellulose makes the sweet potato rather more difficult to digest.

Beets, Carrots, Parsnips, Turnips

Beets and carrots contain a relatively large amount of nourishment, and are much alike in their food value as they contain about 8 to 12 percent of sugar.

The parsnip also contains sugar, but not so large an amount as beets or carrots. It has a large amount of woody material, particularly in the core. Parsnips should be avoided by persons with a tendency to gas in the stomach and bowels.

Turnips have less nourishment in them than either carrots or parsnips. They should be avoided by the sick, but are suitable food for people working in the fields, because they give bulk and keep off the feeling of hunger between meals.

Peas and Beans

Peas and beans contain larger amounts of muscle furnishing material than other vegetables; they also contain a large amount of starch. Young string or wax beans are as a rule easily digested but they contain less food material than the old beans. Beans, especially dried beans, have a tendency to produce gas in the digestive tract and are often constipating. For those who live active lives and who can digest them, baked beans furnish a cheap form of muscle-building and energy-producing food.

Onions, Cabbage, Cauliflower.

Onions contain some nourishment but are eaten largely for their flavor and bulk. The gas or odor which onions and cabbage give off during cooking is the same as that developed in rotten eggs, and it is for this reason that the odor from boiling cabbage or onions is so unpleasant. If these vegetables are cooked uncovered the gas will escape as it is generated and the ordor will be less apparent in the kitchen, but if cooked covered whenever the lid is removed the gas comes out in concentrated form making a very strong and disagreeable smell. When cooked with the lids on the kettles this gas is re-absorbed into the vegetables affecting their palatability and to some extent their digestibility. Cabbage should not be cooked too long, when done it should retain its fresh greenish white color; if it has turned pink or red while cooking it is less digestible. Raw cabbage is more easily digested and more nutritious.

Cauliflower has much the same nutritive value as cabbage, differing chiefly in mechanical structure.

The Salad Vegetables

Lettuce, greens of all kinds, asparagus, celery, cucumbers, etc are eaten largely for their flavor; they are also useful by reason of their laxative effect. The tomato is another vegetable that has but little value as food except for acid and salts. When eaten raw the tomato is refreshing because it is slightly acid; it is easily digested.

Some vegetables, for example, spinach, tomatoes and most green vegetables, are laxative on account of their chemical composition. Some like the cucumber will cause bowel movements because of the seeds, while corn has the same effect because of the large amount of indigestible cellulose in the skin of the kernels. In contrast, beans, peas and turnips may cause constipation.

Cooking and Serving Vegetables

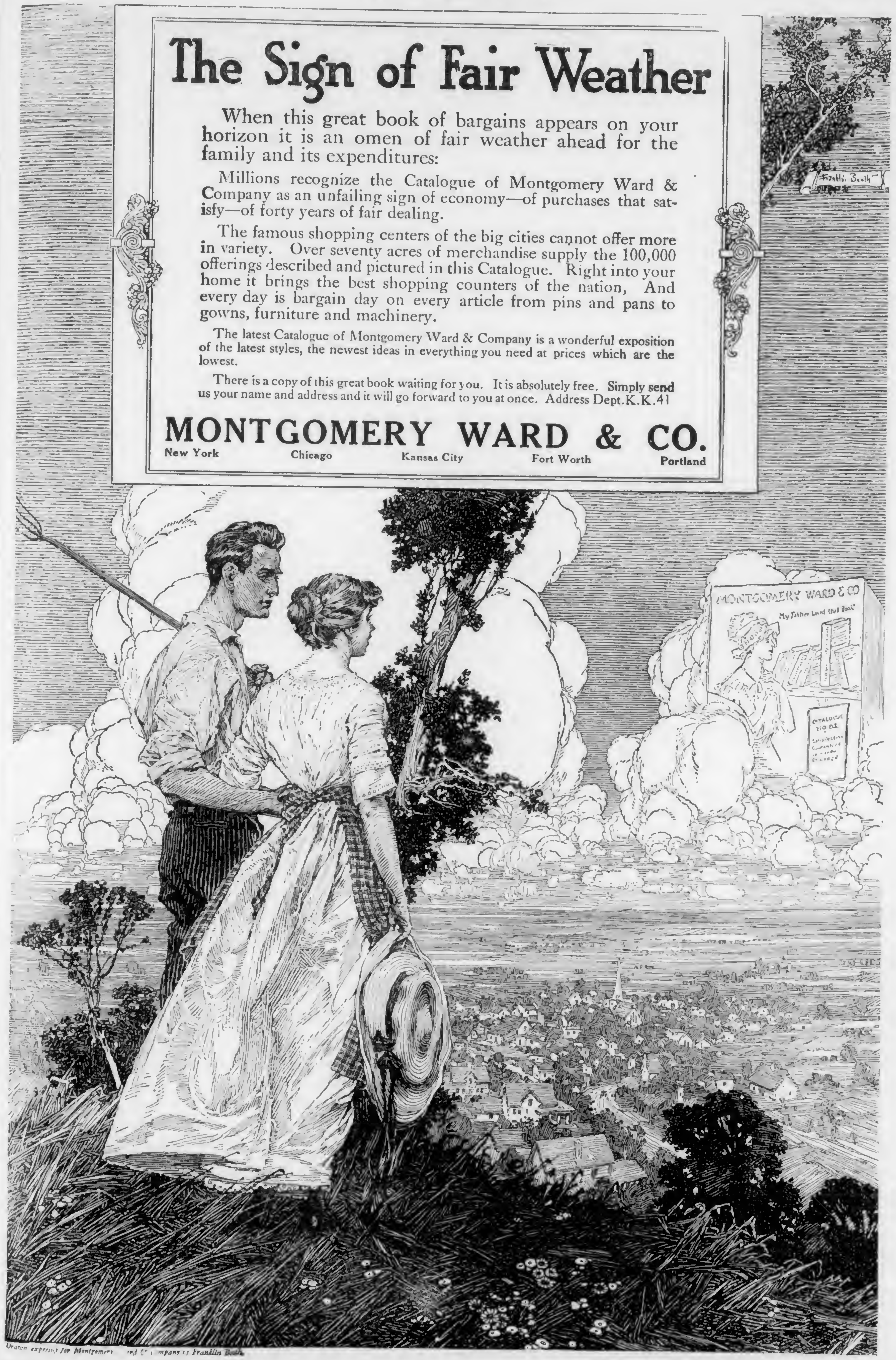
In general the simplest methods of serving vegetables are the best. All vegetables should be cooked while fresh; if for any reason they are wilted they should be soaked in cold water to restore the water content. Vegetables in heads, such as cauliflower and cabbage, should be soaked with their heads down in salted water containing a few drops of vinegar to remove possible insects that may be concealed therein.

Put all vegetables on to cook in boiling water. Salt may be added at the first except in case of peas and beans, which are hardened by salt, and it should therefore be added to these at the last. Cook all vegetables uncovered to keep their color and flavor.

Time Table For Cooking Vegetables

Asparagus	20 to 30 min.
Beans (string)	30 min. to 2½ hrs. (according to age.)
Beans (lima or shell	1 to 1½ hrs.
Beets (young)	45 min.
Beets (old)	3 to 4 hrs.
Cabbage (young)	25 to 30 min.
Cabbage (old)	45 min. to 1 hr.
Cauliflower	20 to 25 min.
Corn	10 to 20 min.
Onions	45 min. to 1 hr.
Oyster Plant (salsify)	45 min. to 1 hr.
Parsnips	30 to 45 min.
Peas (young)	20 to 30 min.
Peas (old)	1 hr.
Potatoes (boiled)	20 to 30 min
Potatoes ((baked)	45 min.
Sweet Potatoes (boiled	15 to 25 min.
Sweet Potatoes (baked)	30 to 40 min.
Tomatoes (stewed)	15 to 20 min.
Turnips (summer varieties)	30 min.
Turnips (winter var)	45 min to 1 hr.

Buttered Parsnips.—Boil the parsnips until tender, scrape off the skin. Slice quite thin, lengthwise. Melt some butter in a saucepan and season with salt and pepper to taste, put in the parsnips and fry until a delicate brown. Remove to a dish and pour the butter over them; sprinkle with chopped parsely over the top.



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Live Stock

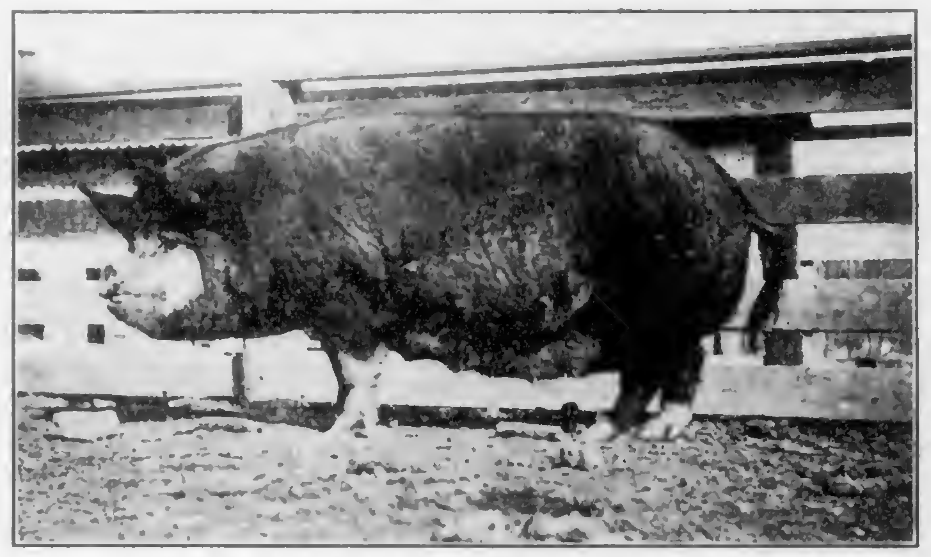
PENNSYLVANIA BERKSHIRE BREEDERS' ASSOCIATION

The Pennsylvania Berkshire Breeders' Association was organized during the recent session of the Berkshire Breeders' Congress at York, Pa. Officers were elected and preparations made for the development of a vigorous organization and state-wide development work. At a recent meeting of the executive committee plans were laid for the extension of the association to include Berkshire breeders in every part of the state. The secretary was empowered to appoint a breeder in each county as a member of the advisory committee to secure new members in their respective counties, aid the state secretary in arranging for public sales, representing the association at county fairs, etc.

Considerable attention will be given to public sales of Berkshires and to fair exhibits. It was definitely decided to hold a public sale next August or early in September at the stables of the Fortside Inn, Whitemarsh, Pa., for which all members will be invited to consign bred sows and gilts as well as sow shoats. The aim of the Association at this sale as well as in other sales to be held, is to be to offer utility rather than fancy stock; good material for the general farmer at reasonable prices rather than record animals at fancy prices.

It was further decided to supplement prizes at county and other fairs so far as possible. Special cups and gold and silver medals will be offered at the Allentown fair and the Devon Cattle Show; also medals at county fairs thruout the state on conditions to be arranged later.

The committee will welcome the cooperation of Berkshire breeders and admirers in all parts of the state. It has entered upon a vigorous campaign and should have the support of all Berkshire men. For further information address Secretary, D. Buckley, Broad Axe, Pa.



SELWYN LASSIE BELLE 145269, BERKSHIRE SOW.
Owned by Ellenwood Farm, Montgomery Co., Pa.

THE FARM DOG

On page 166 of Pennsylvania Farmer, E. P., of Beaver Co., Pa., under the title "The Costly Cur" says many good things on the dog question, however, he is rather extreme, when he says: "The best farm dog I know of is a dead dog." He fails to distinguish between the worthless sheep killer and the well-bred, trained and useful dog. He regards them all as bad. It can not be successfully disputed that there are real good, useful dogs that are worth money to their owners.

I went to one of our leading sheep growers and dealers to purchase a sheep for breeding purposes. The sheep were not very gentle and could not be caught easily, so he called his trained dog and showed him the sheep that he desired caught. The dog singled out that sheep and put it in a corner not ten feet from where we stood.

Only a little more than a year ago a turkey dealer here gathered up a drove of 400 turkeys that he was driving on foot to the railroad. He, with two helpers and a trained dog, was keeping the 400 turkeys herded together and traveling along the road. I watched them and the dog was doing nearly all of the work. The dog seemed to understand every word of his master and every turkey that showed a disposition to leave the drove was quickly turned back to the drove again. I have seen this dog driving cattle and he understands his business almost perfectly. I have seen numbers of just such dogs and it is unfair to class such dogs with the worthless curs.

It is true that the common ill-bred dog can not be trained to be useful, and it would be useless to undertake such a thing. But there are breeds of dogs that are bred and trained to do work, and such dogs are valuable. The well-bred trained dog as a rule is not the dog that does the sheep killing. The great trouble is that there are so many dogs that are not bred to any purpose; they are not trained to be useful and, in fact, the owners have no use for them. The idle, half-starved dog as a rule is the one that does mischief.—A. J. Legg, Nicholas County, W. Va.

NEW STOCK JUDGING PAVILION AT STATE COLLEGE

The Pennsylvania State College is erecting a new pavilion in which to judge stock. The excavating has been started on the far side of the road, just to the northeast of the Agricultural Building. By beginning the actual work of construction early in the spring, it is hoped that the building will be completed by September. This will relieve the crowded conditions which at present hamper the work of the Department of Animal Husbandry, and cause congestion in other departments. The new stock judging arena, which is to be 32 feet wide and 100 feet long, will seat 750 people. Canvas curtains will be so arranged as to make possible the division of the space into three rooms.

Besides the arena, the building will include several class rooms, facilities for preparing animals for exhibition, and a modern abattoir. When completed, the entire structure will consist of a single story built in the form of an oval, 142 feet long and 64 feet wide. It will be made of red brick, finished inside with tile and plaster. The building complete will cost $30,000.—Rush P. Marshall.

CATTLE FEEDING CONVENTION

The first Cattle Feeders' Convention ever held in Pennsylvania will occur at State College, Pennsylvania, April 3, 1914. At that time the steer feeding experiment for the year will be closed. Sixty head of West Virginia cattle have been fed this year. These have been divided into five lots and fed different rations. Some interesting results are being obtained that should be of immense value to Pennsylvania feeders. The results will be presented at this meeting. It will also afford an opportunity to see the cattle and note their condition before they are sold. A competent commission man from Pittsburgh stock yards has been secured to value the cattle in the lots on the day of the convention. A program has been arranged at which the different phases of cattle feeding and marketing will be discussed. This meeting should be of particular interest to cattle feeders in Pennsylvania as it is in direct line with one of their live stock problems. Every cattle feeder in Pennsylvania should make an effort to attend this meeting.

Holstein Sale.—At a two-day's sale held recently at the Liverpool pavilion near Syracuse, 214 head of Holstein-Friesians brought $62,445 or an average of $292 each. The highest price paid for a single animal was $1,750 tho several sold around the $1,500 mark.

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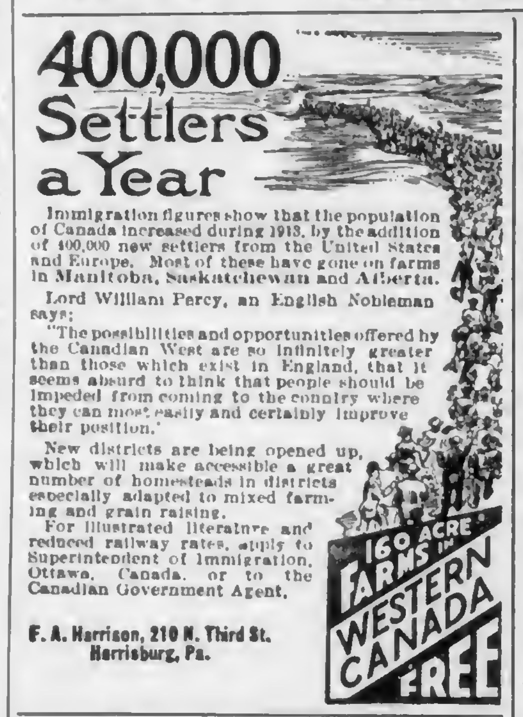

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXV (Concluded)

The bluff that rose steadily higher came back to them, willow and straggling birch flashed by, and at last Payne drew bridle where a rutted trail wound down between the trees to the bridge in the hollow. A swift glance showed him that a mounted man could scarcely make his way between them, and he smiled dryly as he signed to his companion.

"Back your horse clear of the trail," he said, and there was a rattle as he flung his carbine across the saddle. "With Hilton behind him, he'll ride straight into our hands."

He wheeled his horse in among the birches, and then sat still, with fingers that quivered a little on the carbine-stock, until a faint drumming rose from the prairie.

"He's coming!" said the trooper. "Hilton's hanging on to him."

Payne made no answer, and the sound that rang more loudly every moment thru the grayness of the early daylight was not pleasant to hear. Man's vitality is near its lowest about that hour, and the troopers had ridden furiously the long night thru, while one of them, who knew Lance Courthorne, surmised that there was grim work before him. Still, tho he shivered as a little chilly wind shook the birch twigs, he set his lips, and once more remembered the comrade who had ridden far and kept many a lonely vigil with him.

Then a mounted man appeared in the space between the trees. His horse was jaded, and he rode loosely, swaying once or twice in his saddle, but he came straight on, and there was a jingle and rattle as the troopers swung out into the trail. The man saw them, for he glanced over his shoulder, as if at the rider who appeared behind, and then sent the spurs in again.

"Pull him up," cried Corporal Payne, and his voice was a little strained. "Stop right where you are before we fire on you!"

The man must have seen the carbines for he raised himself a trifle, and Payne saw his face under the flapping hat. It was drawn and gray ,but there was no sign of yielding or consternation in the half-closed eyes. Then he lurched in his saddle as from exhaustion or weariness, and straightened himself again with both hands on the bridle. Payne saw his heels move and the spurs drip red, and slid his left hand further along the carbine stock. The trail was steep and narrow. A horseman could scarcely turn in it, and the stranger was coming on at a gallop.

"He will have it," said the trooper hoarsely. "If he rides one of us down he may get away."

"We have got to stop him," said Corporal Payne.

Once more the swaying man straightened himself, flung his head back, and with a little breathless laugh drove his horse furiously at Payne. He was very close now, and his face showed livid under the smearing dust, but his lips were drawn up in a little bitter smile as he rode straight upon the leveled carbines. Payne, at least, understood it, and the absence of flung-up hand or cry. Courthorne's inborn instincts were strong to the end.

There was a hoarse shout from the trooper, and no answer, and a carbine flashed. Then Courthorne loosed the bridle, reeled sideways from the saddle, rolled half round with one foot in the stirrup and his head upon the ground, and was left behind, while the riderless horse and pursuer swept past the two men who, avoiding them by a hairsbreadth, sat motionless a moment in the thin drifting smoke.

Then Corporal Payne swung himself down, and while the trooper followed, stooped over the man who lay, a limp huddled object, in the trail. He blinked up at them out of eyes that were almost closed.

"I think you have done for me," he said.

Payne glanced at his comrade. "Push on to the settlement," he said. "They've a doctor there. Bring him and Harland the magistrate out."

The trooper seemed glad to mount and ride away, and Payne once more bent over the wounded man.

"Very sorry," he said. "Still, you see, you left me no other means of stopping you. Now, is there anything I can do for you?"

A little wry smile crept into Courthorne's face. "Don't worry," he said. "I had no wish to wait for the jury, and you can't get an injury that's inside me."

He said nothing more, and it seemed a very long while to Corperal Payne, and Trooper Hilton, who rejoined him, before a wagon with two men in it beside the trooper came jolting up the trail. They got out, and one of them who was busy with Courthorne for some minutes nodded to Payne.

"Any time in the next twelve hours. He may last that long," he said. "Nobody's going to worry him now, but I'll see if I can revive him a little when we get him to Adamson's. It can't be more than a league away."

They lifted Courthorne, who appeared insensible, into the wagon, and Payne signed to Trooper Hilton. "Take my horse, and tell Colonel Barrington. Let him understand there's no time to lose. Then you can bring Stimson."

The tired lad hoisted himself into his saddle, and groaned a little as he rode away, but he did his errand, and late that night Barrington and Dane drove up to a lonely homestead. A man led them into a room where a limp figure was lying on a bed.

"Been kind of sleeping most of the day, but the doctor has given him something that has awakened him," he said.

Barrington returned Payne's greeting, and sat down with Dane close beside him, while, when the wounded man raised his head, the doctor spoke softly to the magistrate from the settlement a league or two away.

"I fancy he can talk to you, but you had better be quick if you wish to ask him, anything," he said.

Courthorne seemed to have heard him, for he smiled a little as he glanced at Barrington. "I'm afraid it will hurt you to hear what I have to tell this gentleman," he said. "Now, I want you to listen carefully, and every word put down. Doctor, a little more brandy."

Barrington apparently would have spoken, but, while the doctor held a glass to the bloodless lips, the magistrate, who took up a strip of paper, signed to him.

"We'll have it in due form. Give him that book, doctor," he said. "Now, repeat after me, and then we'll take your testimony."

It was done, and a flicker of irony showed in Courthorne's half-closed eyes.

"You feel more sure of me after that?" he said, in a voice that was very faint and strained. "Still, you see, I could gain nothing by deviating from the truth now. Well, I shot Trooper Shannon. You'll have the date in the warrant. Don't know if it will seem strange to you, but I forget it. I borrowed farmer Winston's horse and rifle without his knowledge, tho I had paid him a trifle to personate me and draw the troopers off the whisky-runners. That was Winston's only complicity. The troopers, who fancied they were chasing him, followed me until my horse which I was riding went thru the ice, but Winston was in Montana at the time, and did not know that I was alive until a very little while ago. Now, you can straighten that up and read it out to me."

The magistrate's pen scratched noisily in the stillness of the room, but, before he had finished, Sergeant Stimson, hot and dusty, came in. Then he raised his hand, and for a while his voice rose and fell monotonously until Courthorne nodded.

"That's all right," he said. "I'll sign."

The doctor raised him a trifle, and moistened his lips with brandy as he gave him the pen. It scratched for a moment or two, and then fell from his relaxing fingers, while the man who took the paper wrote across the foot of it, and then would have handed it to Colonel Barrington, but that Dane quietly laid his hand upon it.

"No," he said. "If you want another witness take me."

Barrington thanked him with a gesture, and Courthorne, looking round saw Stimson.

"You have been very patient, Sergeant, and it's rough on you that the one man you can lay your hands upon is slipping away from you," he said. "You'll see by my deposition that Winston thought me as dead as the rest of you did."

Stimson nodded to the magistrate. "I heard what was read, and it is confirmed by the facts I have picked up," he said.

Then Courthorne turned to Barrington. "I sympathize with you, sir," he said. "That must be horribly mortifying, but, you see, Winston once stopped my horse backing over a bridge into a gully when just to hold his hand would have rid him of me. You will not grudge me the one good turn I have probably done any man when I shall assuredly not have the chance of doing another."

Barrington winced a little, for he recognized the irony in the failing voice, but he rose and moved towards the bed.

"Lance," he said, a trifle hoarsely, "it is not that which makes what has happened horrible to me, and I am only glad that you have righted this man. Your father had many claims on me, and things might have gone differently if, when you came out to Canada, I had done my duty by his son."

Courthorne smiled a little, but without bitterness. "It would have made no difference, sir, and, after all, I led the life that suited me. By and by you will be grateful to me. I sent you a man who will bring prosperity to Silverdale."

Then he turned to Stimson, and his voice sank almost beyond hearing as he said, "Sergeant, remember, Winston fancied I was dead."

He moved his head a trifle, and the doctor stooping over him signed to the rest, who went out except Barrington.

It was some hours later, and very cold, when Barrington came softly into the room where Dane lay half-asleep in a big chair. The latter glanced at him with a question in his eyes, and the Colonel nodded very gravely.

"Yes," he said. "He has slipped out of the troopers' hands and beyond our reproaches—but I think the last thing he did will count for a little."

CHAPTER XXVI

Winston Rides Away

The first of the snow was driving across the prairie before a bitter wind when Maud Barrington stood by a window of the Grange looking out into the night. The double casements rattled, the curtains behind her moved with the icy draughts, until, growing weary of watching the white flakes whirl past, she drew them to and walked slowly towards a mirror. Then a faint tinge of pink crept into her cheek, and a softness that became her into her eyes. They, however, grew critical as she smoothed back a tress of lustrous hair a trifle from her forehead, straightened the laces at neck and wrist, and shook into more flowing lines the long black dress. Maud Barrington was not unduly vain, but it was some time before she seemed contented, and one would have surmised that she desired to appear her best that night.

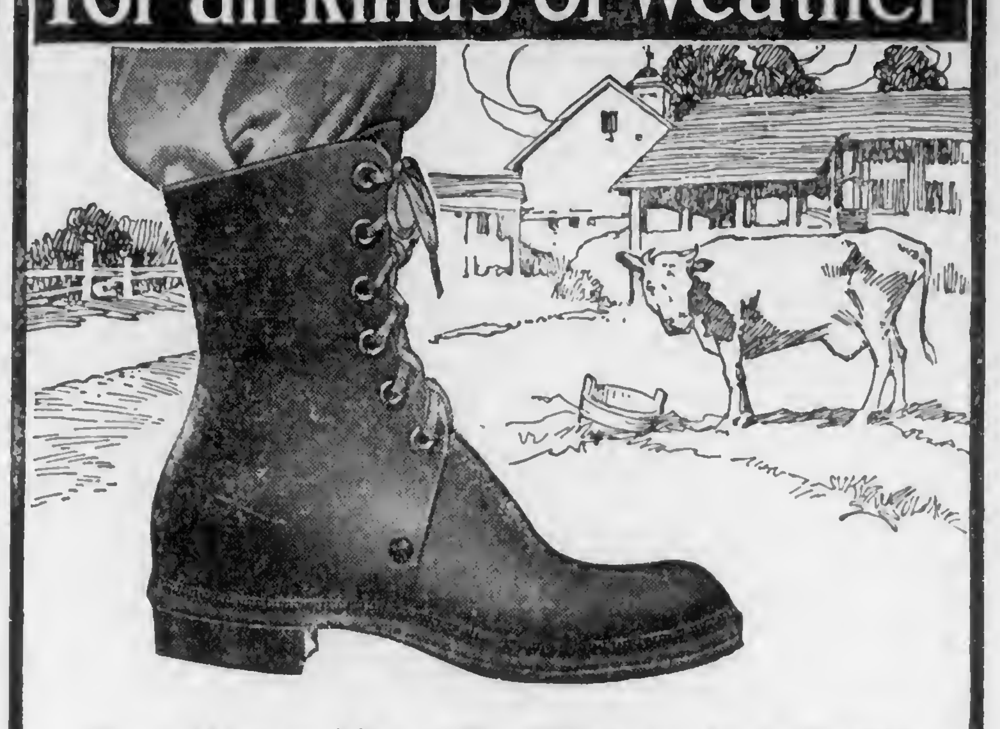
The result was beyond cavil in its artistic simplicity, for the girl, knowing the significance that trifles have at times, had laid aside every adornment that might hint at wealth, and the somber draperies alone emphasized the polished whiteness of her face and neck. Still, and she did not know whether she was pleased or otherwise at this, the mirror had shown the stamp which revealed itself even in passive pose and poise of head. It was her birthright, and would not be disguised.

Then she drew a low chair towards the stove, and once more the faint color crept into her face as she took up a note. It was laconic, and requested permission to call at the Grange, but Maud Barrington was not deceived, and recognized the consideration each word had cost the man who wrote it. Afterwards she glanced at her watch, raised it with a little gesture of impatience to make sure it had not stopped, and sat still, listening to the moaning of the wind, until the door opened and Miss Barrington came in. She glanced at her niece, who felt that her eyes noticed each detail of her somewhat unusual dress, but said nothing until the younger woman turned to her.

"They would scarcely come to-night, aunt," she said.

Miss Barrington, listening a moment, heard the wind that whirled the snow about the lonely building, but smiled incredulously.

(To be continued.)



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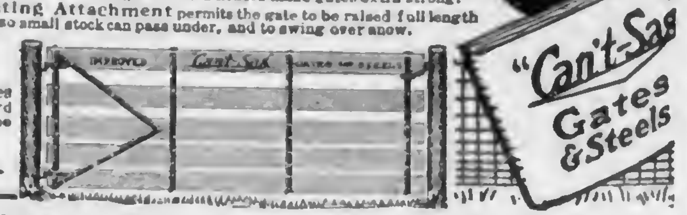

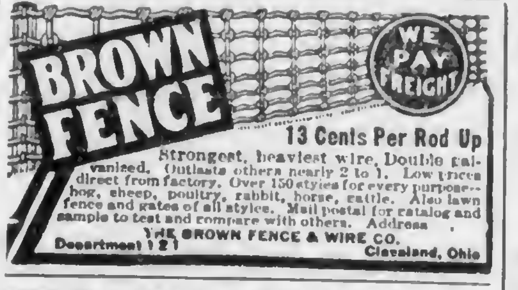

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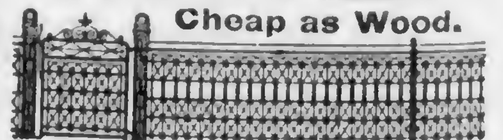

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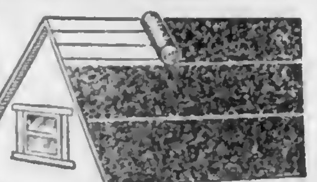

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Poultry.—Fowls, 17@18c; old roosters, 12@13c; pigeons, 30@32c pair.

Dressed Poultry.—Western fowls 12@18½c; roosters, 15c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 75@90c bu. Onions $3@3.50 per 100-lb bag. Peppers $1.50@1.75 per carrier. Eggplant $2@3.50 carrier. Lettuce $2@4 per hamper. Beets, $2 per bbl. Sweet potatoes 45@55c bas. String beans $3@4.50 hamper Squash $2@2.50 per crate. Cucumbers, Florida $4@5 hamper. Celery 50@75c per doz. stalks. Cabbage, new $1.75@2.25 ½-bbl. crate. Cauliflower $1.75@2 per ½-bbl. crate.

Fruit.—Apples $4@6.50 bbl. Pineapples, per crt, $2.50@3.50. Pears, 50@80c basket. Grapes $5@7 per keg; cranberries, $3@3.50 crt; lemons, $2.50@3.50 box; grape fruit $2@3.50 per box; oranges, $2@3 per box.

Hay and Grain.—No. 3 hay, large bales, $18.50@19.00; No. 1 medium $18@18.50 no grade, $10.00@12.00. Clover mixed hay, light mixed at $17.50@18.00; straw No. 1 new straight rye, $16.50; No. 2 do., $15@15.50; No. 1 tangled rye straw new $12; No. 2 do., $11.00@11.50; No. 1 wheat straw, $10@10.50; No. 1 oat straw, $10.50@11; new shelled corn No. 2 yellow 71½@72½c. Wheat No. 2 red, $1@1.00½; No. 1 Northern, $1.05@1.06; No. 2 white oats, 45@45½c; No. 3, white 46@46½c; Standard white 45½@46c.

Coffee.—Rio 7s 9c; Santos 4s 11¾c. Mild Coffee.—Cordova, 13@16½c.

Sugar.—Cut loaf, $5 10 cwt; cubes, $4.15; powdered, $4.00; granulated, , $3.90; standard granulated, 3.95; crystal A, $3.90.

Flour.—For 196 lbs. in wood, winter-clear, $3.85@4.10; do straight, $4.35@4.50; favorite brands, $5.00@5.25; rye flour, Pa., $3.50@3.60 per bbl.

Hides and Skins.—Steers, abattoir, 16¾@17¾c; do country, 15c. Cows, country, 15c. Bulls, abattoir, 14½c; do. country, 13c. Calf skins, Nos. 5 to 12 and up, $1.55@2.75; do green, 14@15c.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅜@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs, 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 7c; country, 7c; do. dark, 6c; do. cakes, 7¼c.

Philadelphia Retail.

Vegetables.—Onions 15c ½-pk. Peppers, 3 for 10c. Eggplants 10@25c apiece. Cabbage, 5@10c a head. Lettuce 10@25c. Beets new 30c bch. Sweet potatoes 20c ¼-pk. White potatoes, 75c basket. String beans 20c quart. Tomatoes, hothouse 6 for 25c; cucumbers 10@15c apc. Celery 3 stalks for 25c. Squash 10@15c apc; cauliflower 25@35c apc; mushrooms, 40c lb.

Fruit.—Grapes 35c lb. Apples 15@25c ¼-pk. Pineapples 25@30c apiece. Cranberries 20c quart; lemons 15c doz; grapefruit, 2 and 3 for 25c; Oranges, 25@50c doz.

NEW YORK PRODUCE

New York City, March 16, 1914.

The tone is barely steady on fancy fresh creamery butter and weaker on all the lower grades. The egg market shows heavy declines, the supply being more than ample for demands. Trading in poultry continues very slow and while there is little warrant for changes in quotations top figures are high. Fruits and vegetables show little change.

Eggs.—State and near-by hennery whites, fine to fancy 27c; gathered whites 32½@33c; fair to good 25@26c; fresh gathered firsts to extras 24½@26c; seconds to thirds, 23@24c; no grades 23c; mixed 25@25½c.

Butter.—Creamery firsts to extras, 25½@28c; thirds to seconds, 20@25c; state dairy 19@27c; packing stock 14@17½c; process 18½@22c.

Cheese.—Whole milk specials, 18¾@19c; do, common to fancy, 15@18½c; skims 5@14¾c.

Dressed Poultry.—Turkeys, dry, 23@25c; chickens, 14@25c; fowls, 12@18c; old roosters, 14c; ducks 13@19c

Live Poultry.—Prices unsettled

Vegetables.—Cabbage, $25.00@30.00 ton. Green beans $2@4.50 bas. Carrots $2.25@2.50 bag. Cucumbers $1@1.50 doz. Lettuce $1 25@4.50 bas. Squash, $3@3.50 bbl. Celery $3.00@4.50 standard case. Onions $2 25@3.00 100-lb bag. Tomatoes, $1.00@3.50 carrier; peppers $1.50@2.00 carrier. Beets, $3.00@5.00 per 100 bunches. Potatoes $1.50@6.50 bbl. Sweet potatoes, 35c@$1 bas. Eggplants, $2@3 per box. Cauliflower $1.25@1.75 bas.

Fruit.—Apples, $2.00@6.00 bbl. Cranberries $9@15 bbl. Pears 75c@$1.50 basket.

Grain.—Wheat No. 2 red $1.00@1.00½; No. 1 Northern, $1.05@1.06; corn, new No. 3 yellow 72½@73½c; oats, standard white 45½@46c.

YORK PRODUCE MARKET

York, Pa., March 16, 1914.

The markets were poorly attended during the week and sales were light. Demand was poor. Eggs dropped several cents. Butter is firm.

Eggs.—27@30c.

Butter.—Country, 30@35c; separator, 35@38c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Scarce. Hens 15@16c. Dressed poultry, 50@90c each.

Vegetables.—Potatoes 10@16c ½-pk; 50c@1.00 bu; cabbage 3@10c each; lettuce, 10@12c; beets, 5c bch; radishes, 5c bch; onions 5c bch., 15@18c per ½-pk; lima beans 14@16c qt; sweet potatoes, 12@15c per ½-pk; lard 14@16c lb; celery, 10@12c; peppers, 8@12c doz; turnips 10@12c ½ pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 22@25c qt.

Fruit.—Apples, 20@35c ½-pk; pears, 15@25c per ½-pk; chestnuts, 12@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.07 bu., corn, 82c; oats, 55c; rye, 77c; bran, $1.50 cwt; middlings, $1.60 cwt.

Wholesale Grain Market.—Wheat, 97c; corn, 69c; oats, 45c; rye, 67c.

WILMINGTON PRODUCE.

Wilmington, Del., Mar. 16, 1914.

Butter.—Print butter, 38@45c lb. Creamery roll, 35 @ 45c.

Poultry.—Chickens, dressed, 18 @ 25c; ducks, 18@20c.

Eggs.—35@40c doz.

Vegetables.—Potatoes 10@12c ¼-pk. Cabbage, new 4c up. Sweet potatoes 45@50c bas. Onions, 10@12c ¼-pk. Eggplants, 10c each. Peppers, 10@15c doz. Parsley, 1@5c bch. Lettuce, 8@10c bch. Beets, 5@8c bch. Cauliflower, 10@20c each.

Fruit.—Apples, 10@25c ¼-pk. Pinapples, 20@25c apc. Grapes, 10@15c lb; 20@25c bas. Oranges, California, 25@30c doz. Florida, 35@50c doz. Bananas, 10@15c doz. Pears, 10@15c ¼-pk. Cranberries, 10@15c quart. Quinces, 20@25c ¼-pk. Grape fruit, 7@10c each.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., Mar. 16, 1914.

Beef Cattle.—Supplies were light and so was demand, altho prices were a shade firmer. Offerings were mostly of Ohio, Virginia, Western and near-by stock. Cows sold slowly and the top calf values ruled easier.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,285	5,873	5,650
Previous week	2,743	9,864	5,418

Best steers	8.70@8.80
Choice steers	8.50@8.60
Good	8.30@8.40
Medium steers	8.10@8.25
Common steers	7.75@8.00
Bulls	5.00@6.70
Fat cows	6.15@6.75
Medium cows	4.75@5.75
Thin cows	3.25@4.00

Veal calves steady

Best calves	$11.00@11.50
Good to choice do	10.50@11.00
Medium	7.50@8.00
Commou do	6.50@7.00

Sheep and Lambs.—The market continues at a standstill, with current rates nominally steady. Holdings were limited but more than ample.

Choice wethers	$6.00@6.25
Good do.	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.25@8.50
Good to choice do	8.00@8.25
Common to medium	6.00@8.00

Hogs.—Conditions were steady with arrivals under satisfactory control. Westerns as to size and quality $12.50@12.75.

City Dressed Stock.—All choice and prime meats of every variety commanded full prices, trade being moderate. Steers, 12@14c; heifers, 10½@13c; cows, 9@11c. Veal calves, 14@15c; country dressed calves. 14@15c; extra do., 15½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 16, 1914.

Cattle.—With a supply of 110 loads compared with 115 loads the week before, the market ruled slow with prices about steady on the fat cattle of all weights, while the light cattle and the cattle on the plain and coarse order were a little easier. Bulls were in liberal supply and sold easier. Best heifers steady while cows were steady on all grades. Best fresh cows steady; other grades and springers slow. Today's supply totaled 90 loads. The market ruled slow at prices barely steady with last week's close. Bulls, fat cows and heifers sold steady.

Good to choice	$8.75@9.00
Good 1,300-1,400 lb	8.40@8.65
Medium to good 1,200-1,300 lb	8.10@8.30
Tidy 1,050-1,150 lb.	8.10@8.35
Fair to medium, 900-1,100 lb	7.40@7.90
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs.	5.50@6.50
Rough, half-fat	5.00@7.00
Common to good fat oxen	4.00@6.50
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.25@6.50
Heifers	5.50@8.00
Bologna cows	3.75@4.35
Fresh cows and springer	25.00@85.00

Calves.—Veal calves in fair supply and the close for the week was a little lower than Monday's prices. Today's receipts were 550 head, and the market ruled 50 cents lower.

Heavy and thin calves	$5.00@7.00
Veal calves	7.50@10.50

Sheep and Lambs.—The demand for choice sheep was good and market ruled steady to strong while on lamb grades the market has ruled about steady, the demand being not quite so good as a week ago. Today's receipts were 20 double-deck loads. With a fair demand the market ruled fairly active on choice sheep, but other grades were easier. Lambs sold a shade lower. Two loads of choice yearling wethers sold at $7.

Prime wethers	$6.10@6.25
Good mixed	5.75@6.00
Fair mixed ewes and wethers	5.00@5.50
Culls to common	3.00@4.50
Prime lambs	5.50@8.10

Hogs. — The supply during the week has been fair but demand during the early part of week was light and market ruled about steady, but with a better demand the last of week the market closed about 15 cents per cwt. higher; pigs still very slow sale. Today's receipts were 40 double-decked loads. The market ruled 10 cents lower than last week's close.

Prime heavy	$9.20@
Prime medium weights	9.20@
Heavy mixed	9.20@
Best heavy Yorkers	9.20@
Light Yorkers	9.10@
Pigs	8.00@9.00
Common to good roughs	7.75@8.25
Stags	7.00@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., March 16, 1914.

Cattle.—Receipts for the week 3,424 head against 2,013 last week.

Steers	$6.25@8.35
Heifers	5.50@7.00
Cows	3.00@5.75
Bulls	5.25@7.00
Fresh cows	35.00@75.00

Sheep and lamb receipts for the week were 2,596 head against 2,791 last week. Fair supply; market steady.

Sheep	$3.75@6.25
Lambs	5.50@8.50

Hog receipts for the week were 11,876 head against 16,143 last week.

Light western	$9.40@9.45
Heavy to medium	9.40@9.50
Near-by	9.20@9.40
Pigs	8.75@9.10

Calves.—Receipts for the week were 399 head, against 367 head last week. Liberal supply, market lower at $6.10@10.25.

BUFFALO LIVE STOCK

Buffalo, N. Y., March 16, 1914.

Cattle.—The market opened with a good demand and higher prices and the feeling was maintained thruout the week on choice. The demand for light butcher steers was good. On the close the market was slow and 10@15 cents lower. Further declines of 10@15c took place on a slow market today. Receipts totaled 3,750.

Choice heavy steers	$8.65@9.00
Medium	8.25@8.75
Yearlings	8.00@8.50
Handy butchers	7.50@8.50
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.50@8.00
Butcher bulls	6.00@7.50
Feeders	6.25@7.25
Stockers	5.00@6.25
Cows and springers	30.00@93.00

Calves. — With liberal receipts for the opening, the market for the week was slow. The opening basis was $11.50@12. The week's close was slow, demand being light. With 1,000 head on sale this morning, further declines took place.

Choice veals	$10.00@10.50
Lights and thin	6.00@8.75

Sheep and Lambs.—The opening supply was about 12,000 head and the demand good; choice lambs were about 10c higher. Heavy sheep ruled slow to lower. On the week's close the market was about a quarter lower. The demand for yearlings was light. Heavy sheep were slow. Sheep and lambs shared in the decline this morning. There were 12,000 head on sale.

Choice lambs	$8.00@8.10
Yearlings	7.00@7.15
Wethers	6.25@6.50
Ewes	5.50@6.00
Sheep	5.75@6.00

Hogs.—The market on the opening was active and 10@15 cents higher. The demand for Yorkers was good and the basis was $9.10. Heavy hogs were also firmer, $9.05@9.10. On the week's close the trade was fairly active, and prices 5@10 cents higher. Yorkers ruled stronger. Pigs were slow. The better grades advanced. Roughs and state hogs were in fair request. Receipts of 14,400 this morning brought a generally lower market.

Heavies	$9.20@9.25
Mixed and medium	9.20@9.25
Yorkers	9.20@9.25
Light Yorkers	9.20@9.25
Pigs	8.85@9.10
Roughs	8.10@8.25
Stags	6.25@7.00

Horses.—The supply was light tho there was an excellent demand for good workers. Drivers were about steady with the supply light.—S.

NEW YORK LIVE STOCK

New York City, March 16, 1914.

Bef Cattle.—Receipts for week 3,100 head. Market lower.

Steers	$6.50@9.35
Bulls	6.00@7.65
Cows	3.50@6.25
Dressed beef	12@13½c.

Calf receipts 4,500 head, Market lower.

Choice	$9.00@13.25
Culls	7.00@8.50

Dressed calves lower. Dressed veals, 13@17½c.

Sheep and lamb receipts 8,000 head. Market steady.

Sheep	$4.00@6.00
Culls	4.00@4.25
Spring lambs	7.00@8.25

Hog receipts 6,900 head. Market steady. Choice, $9.10@9.40; roughs, 8.15@8.35.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., March 16, 1914.

Hay.—The receipts of hay have eased up considerably during the week. Billings in transit are also running light. Market for good hay beginning to look much stronger. Clover and mixed hay are in strong demand and readily selling at top prices. Poor hay, also threshed, is difficult to dispose of.

No. 1 timothy	$16.75@17.25
No. 2 timothy	14.50@15.50
No. 3 timothy	11.00@12.00
No. 1 light mixed	15.00@15.50
No. 1 clover mixed	14.50@15.00
No. 2 clover mixed	11.00@12.00
No. 1 clover	14.00@14.50
No. 2 clover	10.00@12.00

Straw.—Receipts of straw are somewhat free, but there is an excellent demand which readily takes care of all arrivals at top figures.

No. 1 Oats	$9.00@9.25
No. 2 Oats	8.75@9.00
No 1 Wheat	8.75@9.00
No. 2 Wheat	8.50@8.75
No. 1 Rye	9.25@9.50
No. 2 Rye	8.50@9.00

Ear Corn.—Demand has eased up for ear corn. Receipts more than equal demands. Market quiet.

New No. 2 yellow	69@69½c.
New No. 3 yellow	65½@67c.

Shell Corn.—Demand for shell corn slow. Receipts equal to demands. Market dull.

New No. 2 yellow	70½@71c.
New yellow No. 3, natural	66 @66¼c
New sample	64 @65c

Oats.—Demand for oats is good, but buyers will not stand for any advances. There seems to be considerable oats in the elevators still to be marketed, which has a bearish tendency upon prices.

No. 2 white	43¼@43½c.
Standard oats	42½@43c.
Standard No. 3 oats	41½@42c.

Millfeed.—Not much life to middlings.

No. 2 white midds	$27.50@28.00
No. 1 brown midds	26.00@26.50
W. W. Bran, coarse,	27.50@28.00
W. W. Bran, medium	27.00@27.50

ELGIN BUTTER QUOTATION

Elgin, Ill., March 16, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter weak at 26½ cents.

NEW YORK MILK MARKET

New York City, March 16, 1914.

There is a surplus in the market. The value in the 26-cent zone for Grade B is considered to be 3½ cents a quart. The Borden rates for the coming six month, Grade B, have been announced. They are per hundred pounds in the 26-cent zone as follows: April, $1.40; May, $1.15; June, $1.10; July, $1.25; August, $1.40; September, $1.50. Two premiums of ten cents each are offered; one for milk from dairies scoring 68 points; one for milk containing 3.8 percent butter fat. While, of course, the number receiving premiums varies from month to month, it may be said in a general way that about half of the milk from the short-haul districts and about 65 percent from the long-haul zones, earns these premiums. The rates for the corresponding months last year were 10 cents a hundred higher in April and May, the same in June, 10 cents higher in July and 5 cents higher in August and September.

The receipts of milk and cream in 40-quart cans for the week ending March 14, were as follows:

Railroad	Milk	Cream
Erie	46,251	986
Susquehanna	7,980	260
West Shore	15,476	623
Lackawanna	57,110	1,490
N. Y. Central (long haul)	81,794	1,631
N. Y. Central (short haul)	11,870	88
Ontario	43,981	2,802
Lehigh Valley	32,486	1,050
Homer Ramsdell Line	.....	....
New Haven	7,990	140
Pennsylvania	4,015	196
Other sources	1,668	18
Totals	310,621	9,284

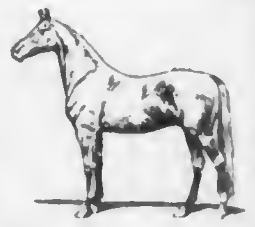
TOBACCO MARKET

Tobacco buyers who have steadfastly held that growers are asking too much for their tobacco, are now under the impression that the approach of "settlement day" (April 1.) will compel the sale of many crops at reduced prices and it is their hope that a long desired landslide in prices will follow. Of course such things have happened but conditions are changing and if the grower will but employ the opportunities that are now being presented he may soon be in position not alone to avoid such contingencies but also to see the end of the speculative career of those who are now seeking to take undue advantage.

At a meeting of the Lancaster County Tobacco Growers Association reports indicated that about one-half of the 1913 crop has been sold. At East Lampeter one-half sold at $8@$9; East Petersburg, three fourth; Lititz, one-half at $7; Millersville very little sold; Rawlinsville, less than one-half at $8@$9.50; Maytown, $8@$9.50; Washington Borough, considerable Havana at $12@$15; Intercourse, 60 to 70 percent of crop at $6.50@$8; West Lampeter, one-half at $8@$10.50; Rohrerstown, none sold; Ephrata, little sold; West Lampeter, ten crops sold at $7.50@$9.50. It was reported from many sections that prices were lower and demand slow. At the same meeting the recently organized Seedleaf Association was discussed at length. The general agreement seemed neither to oppose or favor the new organization until it has had time to show what it will do. It was well remarked that the methods of the organization are clean and plausible. A committee was appointed to make an investigation and report at next meeting. In regard to the new crop it was found that many growers will plant Havana. The majority will raise seedleaf and some both. The matter of reducing the acreage was discussed. A representative of the experiment station announced that the station would test tobacco seed for growers.

The Seedleaf Association announced that 25,000 to 30,000 pounds of tobacco have been delivered at the warehouse of the organization. This was "bonded" at $5@$9 per cwt. The attitude of local banks with reference to the warehouse certificates issued for this tobacco was quite varied, some being inclined to refuse them. It is a noteworthy fact that very few of these certificates have been offered to banks.—H. E. Tweed, March 16, 1914.

Book of Reasons For Engine Buyers.—Every prospective engine purchaser should secure catalogues now being issued by The Temple Engine and Pump Co., before buying. These catalogues list and describe engines for every use and give letters from users of engines giving just the information the purchaser wants. The catalogues are mailed free upon request mailed to The Temple Engine and Pump Co., 2134 So. 54th Ave., Chicago, Ill.



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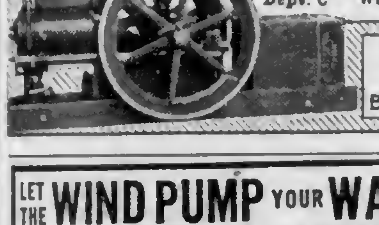

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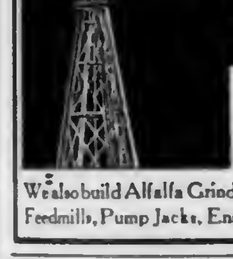

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Everted Uterus.—Soon after three of my ewes lambed their wombs came out and two of them died soon after; the third also died, but not so soon. Upon opening them I failed to find any cause for their trouble. I feed crushed oats for grain ration and oat and pea straw for roughage. A. S., High Bridge, N. J.—The principal cause of eversion is weakness and undue straining at time of delivery. Your ewes may not have had enough exercise this winter or their bowels may have been constipated at time of lambing. If you have other ewes due to lamb soon, increase their grain ration, exercise them more, salt them well, which will increase their thirst and have a tendency to open their bowels. When uterus comes out, it should be washed clean with a one-to 5,000 solution of bichloride of mercury and tepid water; put back into place carefully, then put in two stitches into external opening and apply a surcingle around body at flank to prevent straining.

Nasal Catarrh—Sore Throat.—I have four pigs, 4 months old, that have been sick for some time. They cough and sneeze most of the time, but show it most when eating. Their nostrils appear to be partially closed, causing them to breathe thru mouth. L. N. S., Centerville, Pa.—Your pigs should be kept in a dry, warm comfortable place. Give each of them 10 grains powdered sulphate iron, 2 grains of quinine and ⅛ teaspoonful of cooking soda at a dose, 3 times a day. Dip their noses in a solution of salt and water; a tablespoonful of salt to ½ gallon of clean boiled water, twice a day.

Brain Hemorrhage—Loss of Vision—Paralysis—Deafness—I have a 14-year old mare that went blind and deaf suddenly at night. She was apparently all right in the evening and in the morning I found her in above condition. Her eyes appeared bright, only lids drooped a little, holds her head to left side of the manger and low down, resting head on manger part of time. She eats what I give her, but does not grind hay very well and she appears to be unable to move tongue. She appears stupid and acts dumb. Her ears lop down. I feed her 2 quarts of oats each feed, 3 times a day. She has clover, timothy and straw for roughage. This mare is due to foal in June and I would like to know if she can be cured? O. S., Harmony, Pa.—Your mare has either met with an injury, has some brain hemorrhage or else there is a watery effusion in brain causing nerve pressure which gives rise to deafness, loss of vision and partial paralysis of throat, tongue and lips. Give her 1 dr. fluid extract nux vomica, 1 dr potassium iodide and ½ oz. fluid extract of cinchona at a dose, 3 or 4 times a day. You need not be disappointed if she does not recover. to use a remedy which will not interfere could be removed. What should I apply. I need his work; therefore I prefer

Rheumatism.—We have a cow that him no lameness. I have been told they has shown some soreness or lameness for the past six weeks, but is not al- in weather from hot to cold she is most ways lame. Whenever we have a change crippled but she shows no symptoms of of camphor dissolved in a pint of gasoline. Make this application twice a day and beware of fire in handling gasoline.

Windgalls.—I bought a road horse last fall that was troubled with windgalls on all four legs, but they caused spots, apply iodine and camphor, 1 oz. twice a day. If you can locate sore her 2 dr. sodium salicylate at a dose, a dose in feed 3 times a day; also give spoonful powdered nitrate of potash at nor, Pa.—Give each cow a dessert- has met with an accident. M. T., Elgin- [illegible] before that she with his usefulness. M. J. B., Jamestown, N. Y.—If I owned your horse and he was doing good road work every day, I should leave him alone. If treated at all apply 1 part iodine and 10 parts fresh lard, 3 times a week. I found applications of glycerine to act fairly well on cases of this kind, but remember chronic solidified windgalls cannot be reduced entirely.

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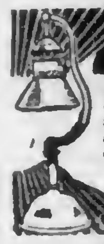

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"I am feeding my hogs "Sal Vet" every day, and they are doing finely on it. There is quite a lot of hog cholera around here but my hogs are thrifty and in good health, and I want to keep them so."—S. I. Steinminger, Rt. 1, New Columbia, Pa.

"'Sal Vet' is doing fine work for my hogs. Before feeding it I had lost 38 head of hogs, but since feeding it, I have not lost a single one, and they are looking better than they ever did."—T. C. Corl, Bellefonte, Pa.

"I thought my pigs were all healthy and free from worms, and wanting to keep them so, I sent for "Sal Vet." However, after feeding it a while, one of my sows that was due to farrow in about four weeks, showed signs of worms. These were soon expelled and she came thru with a nice litter of pigs. The rest of my herd all looked a great deal better and picked up, and I have seen no sign of worms since."—Will S. Loflin, Rt. 3, Box 6, Kingsley, Pa.

"One of my young horses would not eat until I gave him "Sal Vet." It not only restored his appetite, but expelled more than a peck of worms from him, and he no longer looks like the skeleton that he did before. I can recommend "Sal Vet" to do more than you claim for it."—Sam'l F. Moyer, Stouchsburg, Pa.

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No. of Sheep........*Hogs*........*Cattle*........*Horses*......

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"I am as strong for SAL-VET as ever. Almost every one, in these parts, has lost hogs, but mine are still doing finely, thanks to SAL-VET." Dick Crookham, Lacey, Ia.

"SAL-VET has been a great help to my hogs as none have died since I fed it, although previous to its use, I had a number of losses. T. J. Reed, Rt. No. 1, Hutton Valley, Mo.

"Hog cholera has swept this part of the country, but for the first time in years, my own hogs escaped. I have been feeding SAL-VET and now I would not be without it for double the price."
Thomas Fitzgerald,
Rt. No. 2, Connersville, Ind.

"I took some of my poorest and weakest pigs, shut them up in a lot by themselves, and fed them SAL-VET in order to make a test. I found SAL-VET all you claim. These pigs are now good, strong, healthy shotes, weighing 125 to 150 pounds. I shall always feed SAL-VET the year 'round."
W. A. Kearn, Rt. No. 1, Tampico, Ills.

"Your SAL-VET is certainly all to the good, and you may always count on me to be a booster.

When the SAL-VET arrived, our hogs were either all sold or dead with cholera. There were five little runts alive, which were considered as good as dead, but, thanks to SAL-VET they are the best looking hogs of their age in the neighborhood. My one regret is that we did not get SAL-VET sooner, as I feel that we could have saved the whole bunch."
LeRoy A. Barrett, Oswego, Ills.

"When the SAL-VET arrived my hogs were sick, and up to that time, I had lost sixteen pigs, all under twenty pounds. After the balance of the pigs had access to SAL-VET, they came through all right, and some of them now weigh 525 pounds, which I consider pretty good. I am talking SAL-VET to every man I meet, as I honestly believe it is the one conditioner and preventitive to feed to hogs the year 'round." Ben E. Woitte,
Prop. North Grove Farm,
Rt. No. 1, Milbank, S. D.

"When we butchered our hogs, we found them entirely free from worms, although before we began feeding SAL-VET, one hog in particular seemed badly out of condition and was coarse and rough. When we butchered him, he was the smoothest and fattest hog in the bunch."
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Bauman Michael
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Purchase and Mixing of Fertilizers.

By SHELDON W. FUNK,
State Farm Adviser on Horticulture,
Berks Co., Pa.

The economical buying and intelligent use of commercial fertilizers is a subject that the ordinary farmer knows less about than almost any other on the farm. It is not a hard problem to solve, and yet it may mean the saving or losing of quite a large sum of money and disappointment in wasted effort in a very short period of time.

We know that in a complete fertilizer we buy the three elements of fertility; namely, nitrogen, phosphoric acid and potash; no others. Ordinarily these are the only three elements in our soils of which the available portion ever becomes exhausted. Instead of buying fertilizers according to the analysis, or the content of one or more of these elements, as they should always be bought, a great many farmers buy them according to the name or the price of the brand. For potatoes they buy what the manufacturers choose to call a "potato brand;" for corn, a "corn brand," regardless of what they contain. They are bought in this way, regardless of the fact that strictly speaking, there is no such thing as a potato fertilizer or a corn fertilizer. We have all observed that different soils, or even different fields in the same type of soil, require a different fertilizer to meet actual requirements.

Again, the content of a potato fertilizer, for instance, will depend almost altogether upon the firm which is manufacturing the goods. I know some firms that manufacture what they call a potato fertilizer that carries but 1 percent of ammonia, while others carry as much as 5 percent; both being labeled as a potato brand. These two brands have the same name but are entirely different, and the one will cost from $10 to $15 more than the other. The first brand would do fairly well for potatoes on some limestone soils, while the second brand would give too much top growth on the same soil. Change over onto an ironstone soil and results would likely be the reverse. So we can readily see that if we wish to buy fertilizers economically we must buy strictly by analysis and not by the brand name.

Naturally, the farmer is blamed for not buying these fertilizers according to analysis, but in my opinion much of the blame belongs to the manufacturer, who, if instead of putting six or eight different terms upon a sack of complete fertilizer would only put on the content of nitrogen, available phosphoric acid and actual potash, the only things which are found therein, many more farmers would be buying their goods entirely by analysis. Not only would the farmer be benefited by such a change but the manufacturer as well, because the farmers would secure better results and therefore would purchase a larger amount of material.

I have said that different soils as well as different crops require different fertilizers. Therefore no one can tell you the best fertilizer to be used for a particular crop on your soil unless he knows your soil conditions thoroly. Usually we know our soil better than any other person, so if we would use commercial fertilizers economically we must learn to buy the smallest amount of the different elements that will give us the largest returns for our money. To do this, will we send a sample of our soil away and have it analyzed? No, the plant does that for us. My plants tell me how much and what kind of fertilizers will enable them to make their finest growth; this is the best and only way in which we can settle that problem satisfactorily. In other words, we must experiment with different fertilizers on different crops, right on our own farm and until we do this we are working at a disadvantage.

PLOWING TOUGH SWAMP SOD ON MEADOW ISLAND FARMS, N. J. SEE ARTICLE PAGE 2.

We do not know as definitely as we would like the exact duties of each particular element, but we do know in a general way that nitrogen promotes wood and leaf growth. It gives to the plant that dark luxuriant green color which is always found in a healthy plant. Therefore if our trees or plants are not making a rapid growth and the leaves have a yellowish tint to them, we know that nitrogen is lacking. On the other hand, if we are getting too much wood and leaf growth, we must cut down on our nitrogen and increase the phosphoric acid and potash content of our soil. In the same way we have learned that phosphoric acid helps toward the building up of the seed or grain part of the plant; and when our soil produces great large corn stalks with small ears, an application of phosphoric acid usually gives a material increase in corn. The main duty of potash seems to be to give rigidity to the stalk, to make it stronger and better able to carry its load of fruit or grain.

PULLING HEAVY DOUBLE-ACTION DISC HARROW WITH TRACTOR
on Meadow Island Farms, Warren County, N. J.

Taken as a whole, the soils of Pennsylvania seem to be most deficient in phosphoric acid, while some of us are using more potash than is necessary. In my case I remember when we used 10 percent potash for potatoes. We gradually learned that 6 percent was sufficient, making a saving of about $4 per ton. Following this problem a little farther, we found that oftentimes we could not get the analysis we wished to have, because the manufacturers did not mix it. And then after investigating matters still farther we found that we could save a little money by mixing our own goods. The result was that in the first year, we mixed a fertilizer for $25 per ton that the manufacturer declared he would be losing money upon if he sold it under $39 per ton. Now I do not wish to convey the impression that you can save $14 on every ton, but I do believe that ordinarily you can make a very nice profit by home mixing, and make it during the winter months or on rainy days, when there is very little work to be done.

Many manufacturers have told me that I cannot mix the ingredients by hand nearly so well as they can with their improved machinery. I will not dispute that part, but I can mix them well enough for all practical purposes. The plant tells the tale with me every time, and so long as I can secure better and finer plants for less money, where I use my own mixed goods, just so long will I mix my own fertilizers. A great many farmers have an idea that mixing fertilizers is quite a problem. We find it is quite a simple operation. Any person who can do a little figuring will have no trouble.

The first thing necessary is to understand the different ingredients and what they carry. We have three different forms of nitrogen, representing the different stages of decay or availability. There is organic nitrogen, the kind we have in dried blood or tankage, which is neither soluble in water nor immediately available to the plant; nitrogen in the form of ammonia which is soluble but not immediately available, as sulphate of ammonia for instance; and nitrogen in the form of a nitrate, as nitrate of soda, which is both soluble and immediately available. Since nitrate of soda is supposed to last in the soil only about six weeks, where you are carrying more than [illegible] percent of nitrogen in your fertilizer it is always advisable to take at least ½ or 3-5 of it from the organic state and the remainder from the nitrate of soda. In this way your nitrogen is gradually becoming available thru the entire season. The best dried blood carries about 13 percent nitrogen; tankage from 5 percent to 8 percent of nitrogen and from 8 percent to 4 percent phosphoric acid, while nitrate of soda carries 15 percent nitrogen.

In choosing phosphatic materials we want the cheapest and best carrier of available phosphoric acid. This is usually the acid rock which analyzes 14 to 16 percent phosphoric acid, depending upon the grade you buy. Bone meal is an excellent source of phosphoric acid but is more expensive. Basic slag is also an excellent source and carries about 18 percent phosphoric acid and 35 percent of lime, but for general purposes I prefer the acid rock.

In potash, use the muriate for all crops excepting tobacco and sugar beets, where the sulphate is the better. Both forms carry about 50 percent actual potash. There are a great many other carriers that I might mention but these are the standard goods, also the most economical and will make a nice dry mixture.

If we wish to mix a fertilizer containing 4 percent of nitrogen, 9 percent of phosphoric acid and 6 percent of potash, we would use the following ingredients: To secure 4 percent nitrogen we would need 80 lbs in a ton. Taking ¼ of it from nitrate of soda and ¾ from dried blood we would have 133 pounds of nitrate of soda and 460 pounds of dried blood. (Oftentimes the term ammonia is used instead of nitrogen. The difference is that only about 4-5 of the ammonia is nitrogen, hence the above mixture would equal 5 percent ammonia.) A content of 9 percent of phosphoric acid would mean 180 pounds to the ton, or 1,125 pounds of 16 percent acid rock. Goods to carry 7 percent potash would require 140 pounds of actual potash to the ton, or 280 pounds of 50 percent muriate. Totaling these four ingredients we have 1998 pounds of fertilizer with no filler or make weight. On the other hand, if we were mixing a low grade material, as a 1-8-6 for instance, it would only contain 1,375 pounds of the same ingredients, and the fertilizer manufacturer would put in 625 pounds of make-weight, either in the form of sand or coal ashes or in the form of lower grade ingredients, to bring the weight up to a ton. This is not necessary when you home-mix, because if your mixture does not total a ton you simply apply less to the acre. However, in buying ready-mixed fertilizers you can readily see that it never pays to buy a low grade mixture. Far better, buy a high-grade fertilizer and apply less to the acre than pay freight together with the time and trouble of handling 500 or 600 pounds of material which does not benefit you a particle.

To mix your material, place the different ingredients in layers on top of each other, either on the barn floor or on a hard ground floor, (a little ground will do no harm). Let one man use a shovel and the other a rake, mixing it the same as you would concrete. Shovel and rake the pile about twice and run thru a sand screen to remove the lumps, after which you are ready to place it back into the bags. There are a few don'ts in the fertilizer business which it is well to remember as follows:

1. Don't mix lime or any carrier of lime with any material containing organic nitrogen or it will tend to drive off the nitrogen in the form of ammonia gas. For the same reason never mix lime or wood ashes with manure.

2. Don't mix lime or any carriers of lime with acid rock or it will change the available phosphoric acid to the insoluble state.

3. Don't take more than 1-3 of your material from what is known as the "salts" (nitrate of soda and muriate of potash) or your fertilizer will tend to become hard if allowed to stand for any length of time.

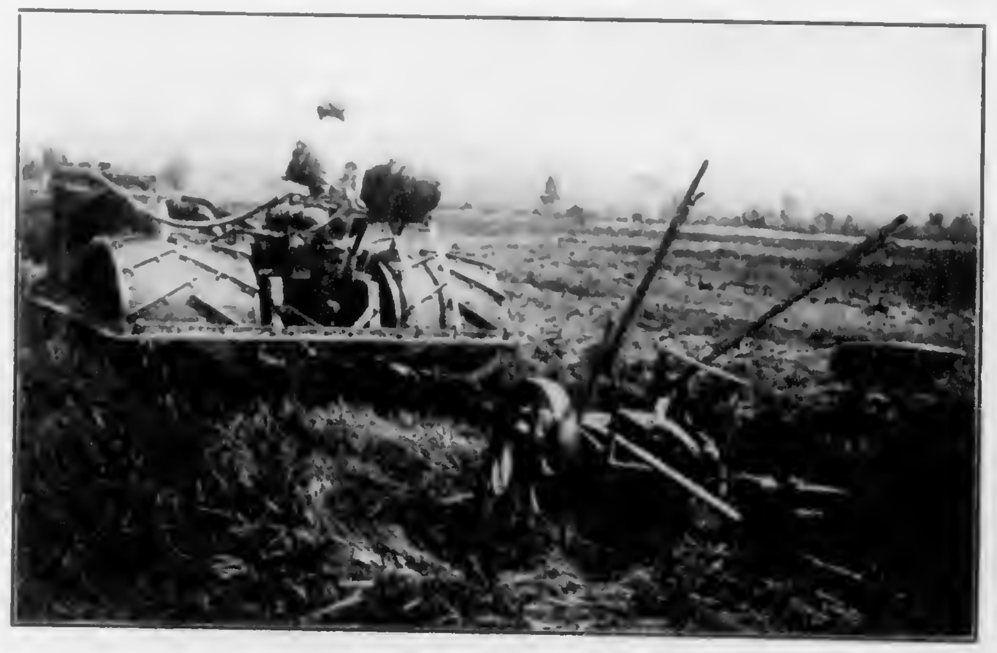
4. Don't use commercial fertilizers simply to increase next year's crops; but with the main idea of increasing the vegetable matter in your soil. Decaying vegetable matter, or humus, is after all the foundation of all agriculture, and when you and I have a sufficient amount of that humus stored up in our soils we will have no use for the commercial fertilizers.

Follow these instructions, buy your raw materials from the manufacturers, always according to analysis, pay cash and you will not only save money but you will gain a lot of practical knowledge along the line of commercial fertilizers.

Farming With Heavy Traction Power

By HARRY HUBBARD, Mgr. Meadow Island Farms, N. J.

Owing to high cost of labor and difficulty of obtaining same, many farmers are looking for machinery to take the place of the old method of using horses and drivers. This problem has been solved in part on the large level farms of the Central West by using tractors, either steam or gasoline. These outfits were all right where fields were large and regular in shape, but were not satisfactory for the man with a small irregularly shaped field, on a small farm. Owing to the demands of the man with the small farm for a tractor suitable for his use a number of companies have put small tractors on the market. The writer has used one of these tractors, the past year on a farm in Warren Co., N. J.



PLOWING WITH DEEP TILLING MACHINES.

Our tractor is unlike the usual type in that it has three large broad rollers in place of the narrow wheels generally used on tractors. It has a 3-cylinder, 2-cycle motor, water cooled, and is equipped with transmission and differential the same as many automobiles and motor trucks. It is rated at 30 horse power, developing 4 to 6 horse power at the draw, or 8 horse power under favorable conditions. It has three speeds forward and one reverse. I have not been in position to give this tractor a good trial under favorable conditions, but have tried it out well under unfavorable conditions as the work I have done was on low land, that had not been plowed for 15 to 20 years, and had grown up in willows and bogs. The tractor did not give any trouble under these conditions, but we could not get the plows that would work well in this tough, boggy sod.

From the work done under these conditions I am convinced that where land had been plowed and cultivated in the usual manner the tractor could plow 10 to 12 acres per day, at a cost of from 50 cents to 75 cents per acre, including the cost of one man at $2 per day and one man or boy at $1.50 per day. For disking and harrowing this tractor is ideal. The large broad rollers crush lumps or clods, leaving the surface smooth for disk or harrow. I have used our tractor to draw a large double-action harrow with 28 disks as shown in cut on page 1. I can draw this disk on plowed ground at the rate of 4 to 6 miles per hour, set at an angle that would tire 4 large horses in one-half day. I figure that the cost of disking is greatly reduced, and that the tractor has many advantages over horses as at that season it is generally warm and dusty and the usual number of horses can not do this heavy work fast enough to get crops in on time. With a tractor you can rush the work and when it is done you do not have extra idle horses to feed and care for. Heat and dust do not cause you to slow up with work with a tractor as it does with horses.

I have also used this tractor to remove large stones, and move small buildings from place to place. It is ideal for this work as you can go very slow or stop just where you wish to. While I have not used this tractor to draw grain drill, mower, binder, etc., it is my intention to do so the coming season. There is a large amount of bog muck land on this farm, from which I intend to remove the bogs with bog cutting machine drawn by the tractor. It is almost impossible to use horses on this soft land for this purpose.

As to cost of operation of tractor compared with horses, I have been able to do as much with our tractor as I could have done with four to six horses, and do it much cheaper. It does not take as many men, goes faster and the cost of oil and gasoline are not as great as feed for horses. On rainy days we do not have the six horses to feed. The tractor is very simple in operation and can be worked by any one who can handle other farm machinery or an automobile. Owing to broad rollers and low construction it is impossible to tip it over. I have used the tractor for the following purposes, for which I find it very satisfactory: Plowing with three-bottom plow, three furrows 14 inches each. Plowing with deep tilling machine. Disking with double action disks. Harrowing, pulling grubs, removing stones, as a land roller, hauling heavy logs and moving small buildings. I have also used it as stationary power for sawing wood, cutting stalks, etc. The repairs for tractor since purchased in July, 1913, have only been 50 cents, and these were for breakage caused by accident.

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Farm Crop Notes

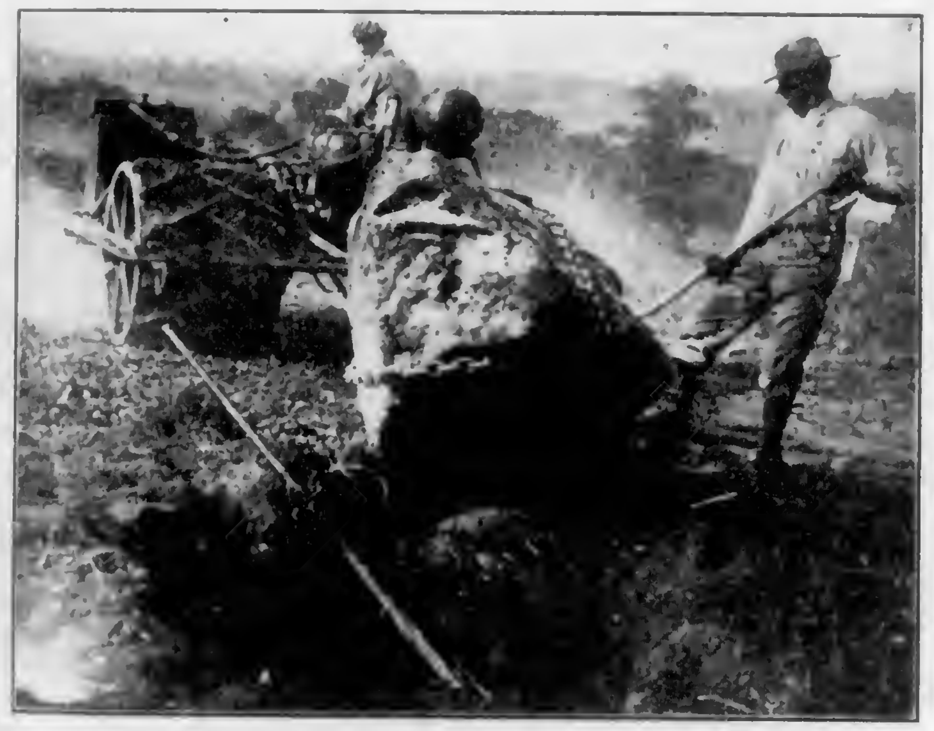
By R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

NATURAL METHODS OF SOIL IMPROVEMENT.—II.

Tillage (Continued)

One operation in tillage, one which logically comes before plowing, is that of disking the sod. This is especially helpful if the sod is heavy or if the plowing is to be deep. When the sod is chopped up to the depth of three or four inches by a disk or cut-away harrow and turned over at the proper angle by the plow, the subsequent cultivation mixes the sod with the soil, increasing its water-holding capacity, and promoting a more rapid decay and a better distribution of organic nitrogen.



PULLING OUT HEAVY BOULDERS WITH FARM TRACTOR, MEADOW ISLAND FARMS, N. J.

After plowing, the next work of tilling is harrowing. Simple as this operation is, it is one that is too frequently ineffectually and improperly done. When the soil is in just the right condition for plowing, it is also in the best condition to harrow. Spring or summer plowing should be followed closely by the harrow. Evaporation is very rapid from the newly turned furrow during the hot windy days of spring and summer, and the soil is dried out, furrow deep, in a very short time unless the plowed ground is harrowed at once after plowing. It is usually safest to harrow after each half day's plowing. Land that has been plowed in fall or winter should be harrowed the first day that it is dry enough to harrow in the spring. By so doing we stop the rapid evaporation of the moisture—can it up, as it were—for use in a possible dry spell to come. Not only does harrowing as suggested help to retain moisture, but the soil pulverizes better and more easily at this time than is possible after it becomes dry and baked.

Soil must be well pulverized to be in best condition for plant growth. A little root can no more make use of a clod than it can make use of a stone. While air is necessary in the soil, large air spaces are detrimental to root development, and they necessarily exist when the soil is cloddy. Reducing clods and pulverizing the soil by rolling and rubbing is costly, and less effective than harrowing when the furrow is freshly turned, or, when fall plowed land is first dry enough.

Intensive cultivation is one means of increasing the solubility of plant food, hence, of increasing production. Cultivation has been called the "poor man's manure," altho it alone does not add anything to the soil. Only a small part of the land under cultivation recieves sufficient cultivation for best results. Inability to give it is frequently charged to lack of time and sufficient labor. This is probably true, but the wise thing would be to farm less acreage. A full crop from five acres is better and more satisfactory than a half a crop on ten acres. Under present conditions the average farm is twice too large to farm properly, yet the farmer feels that he must try to spread over all of it.

A little boy was once given a hen and privilege to set her. One day he came in and announced that he had set old Biddy. "That's good," said his mother, pleased that Johnny was taking an interest in it, "and how many eggs did you give her?" "I gave her thirty eggs," said Johnny. "Why, Johnny, she can't properly cover thirty eggs." "I know she can't,' said Johnny, "but I like to see the old fool spread herself."

The ideal seed-bed is well pulverized, firm beneath and loose on top. Frequent harrowing, and possibly rolling or rubbing is the way to produce it. He who plants a crop on loose, cloddy, poorly prepared soil, invites failure, no matter how much he may spend for fertilizer.

"How much cultivation should be given?" is frequently asked. I will answer it as a stone mason once answered me when I asked him how many stone to draw for a wall. "Haul until you think you have enough, and then haul as many more," he said.

I know of a crop of corn being raised on a poor, run-down field in the following way: No manure or fertilizer was used because none was available. The field was plowed in the fall, about 2 inches deeper than ever before. It was harrowed as soon as dry enough in the spring. It was harrowed seven times before planting and three times with a light spike tooth harrow after planting, and cultivated six times during the summer, making 16 times in all. The result was a good crop of corn on a field where a previous crop of corn, grown with the usual amount of cultivation, was not harvested because there was practically nothing to harvest.

Another incident in mind is that of a man beginning at fifty years of age with nothing and succeeding. He bought twenty-five acres of run-down land on time, built necessary buildings and went into fruit raising. Small fruits and tree fruits were raised. "Intensive cultivation" was his motto. Early and late, the season thru, you would see him out in the field with old Charley hitched to the harrow or cultivator. He grew fine fruit and berries, and died at the age of seventy-five, after developing and paying for a nice comfortable little home. But he had naturally two necessary qualifications; he loved nature and he was not afraid of work.

One thing should be noted in connection with this instance, this man's place would be in better shape today if he had, in connection with his intensive cultivation, sowed catch crops and cover crops to add humus and plant food, and prevent leaching and washing.

Cultivation should leave the ground as level as possible. For this purpose a demand should be made for a seven-tooth, one-horse cultivator instead of the implement with five teeth, now in general use. A two-horse sulky cultivator is better for having eight teeth than six teeth. The first harrowing is best done by a spring tooth harrow. After two or three harrowings with this implement, a light fifty or sixty-tooth harrow does good work.

Next week, water and soil moisture. —R. P. K.

BEWARE OF SECOND HAND POTATO SACKS

The Department of Agriculture has issued a special caution to potato growers against the use of any second-hand British or European potato sacks unless sacks have been thoroly sterilized since they have contained or come in contact with foreign potatoes. This warning is due to evidence thru recent inspections of the presence of a number of the most serious potato diseases among importations of that staple from Europe, including late blight, silver scurf, dry and soft rots, common and powdery scab. The germs of these diseases may be carried in the sacks.

Where Co-operation Pays.—The South Jersey Farmers' Exchange has given a practical demonstration of the business advantages of co-operative marketing of farm products and purchasing of farm supplies. The exchange has been operating for five years. Its capital is about $28,000. This last year it did a business of over $700,000, and has made a profit of 52 percent. Its stock shares have doubled in value; its members not only have received good prices for their products, but have bought their supplies of every sort rock bottom prices. The 600 men who make up its membership are prosperous and well-satisfied with their business.

Institute Work.—In spite of the severe weather lately there was less attendance at farmers' institutes than in 1912-1913 according to reports made to the division in charge. The early sessions were remarkably well attended and the snows have prevented a record attendance. Enough interest has been aroused to justify the request for an increase in appropriation which will permit of 50 to 75 more days and 20 additional movable school days.

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Horticulture

CARE OF YOUNG TREES AND SHRUBS

One reason why there is little danger of an over-production of fruit, is that only part of the trees, vines, etc., that are planted, ever come into profitable bearing. Many plant trees, perhaps, in sod and then leave them, and some of the young trees either die or fail to develop well. When a young tree is planted in the spring it has to do two things to live, viz: make leaves with which to get the greater part of its food from the atmosphere; and new roots with which to get the smaller supply from the soil. In order that it may get such a start as will give it a chance to develop naturally and normally into a full grown tree with a large capacity for fruit bearing, it must have fine, rich, moist soil in close contact with its roots.

Naturally the tree in its efforts to live will put forth new roots that it may get food from the soil. Water is the medium thru which the plant gets its food from the soil, hence, the more abundant and constant the supply of water, the better the chance of the tree to live and grow. Cultivation or mulching are the methods by which moisture is conserved and either one of these methods should be systematically adhered to. It is for the grower to determine which of these methods he should use.

ORCHARD INTERCROPPED WITH CARROTS AND EGG-PLANTS EVERY YEAR UNTIL LAST, WHEN SHADE BECAME TOO DENSE.

Last spring I was able to prove the value of frequent cultivation and the dust mulch around newly planted trees. An order of flowering shrubs to make a larger border on our grounds was shipped so it came to me in a very dry time. After root and top pruning, I planted them in dry but finely pulverized soil, taking much pains to compact the soil very closely over the roots. One month of dry cold weather followed. I did not water the shrubs, but nearly every evening stirred the soil around them with the hoe, and in the morning I noticed damp soil around them showing that capillary attraction had brought up moisture to their roots, and cultivating the soil had temporarily sealed the capillary tubes. Every shrub lived and is growing finely. The same plan has been practiced in my young orchard with the same good results.

When it is practicable, as with the large orchard, or in the garden culture of trees, the benefits of cultivation are best obtained by some system of intercropping that necessitates frequent cultivation of the crop. The ground is gone over every few days with cultivator and hoes, so that it takes but little extra work to cultivate the soil close around the trees. There is no reason why profitable cultivated crops cannot be grown in young orchards for a few years after the orchards are planted so as to get nearly as large returns from it as if no trees were on the ground. In this way fertilizer applied to the crop, and the clean and thoro cultivation necessary to maintain it furnish just the right condition for the growth of the trees. The choice of the intercrop will depend on the use one can make of it. It can be potatoes, corn (sweet corn or low growing kinds are best), beans, cabbages, small fruits, etc., or even dwarf trees. I am growing strawberries in my young orchard because I have a local market for fine berries at a good price. When trees are planted in places where it is not convenient to cultivate them frequently the best way to make the young tree live and keep it growing is to mulch heavily around the tree when first planted, preferably with coarse manure. Afterward grass, weeds, refuse from the garden and farm, or whatever will retain moisture may be used and the decomposition of these materials furnish humus. I would prefer to have this mulch placed in a circle covering a space of 3 or 4 feet around the tree, but not quite close up to it, as the rain will better soak into the ground.

The leaf surface of a tree should be in proportion to the root growth. To preserve a balance between the leaf and the roots, the leaf surface of young trees should be enlarged gradually by right pruning. When the tree is planted the branches should be shortened perhaps one-third or more, and it may be well the first year to pinch off some of the leaves or sprouts on these when planning for a symmetrical, vase-shaped top. The second year still more shoots may be allowed to grow, keeping in mind a balance between the root and leaves and at the same time trying to establish a permanent head of the right shape. The more we cultivate the tree and conserve moisture for it, and promote root growth, the larger is the surface of foliage to be utilized by the tree, and consequently the more rapid will be its growth.

Ideally this culture of young trees by intercropping or mulching should be continued until they come into profitable bearing, and are beginning to occupy the spaces between the rows. Care should be taken to apply fertilizers to the cultivated crops that are suitable both to them and the trees. In this connection it might be said that there is a right use of such chemicals as nitrate of soda, and acid phosphates, and perhaps in some cases potash, but it is safer to depend on animal manures. With the practice I have outlined, the time for a fruit tree to come into bearing can be much shortened, and the fact that one may get nice fruit in 3 to 5 years should encourage one to plant trees and rightly care for them. —W. H. Jenkins, Delaware Co., N. Y.

A WOMAN'S VEGETABLE GARDEN

If women would only realize the value of fresh air and out-of-door exercise as a substitute for doctors and drugs, this old world would be more of a paradise. Onions are a wonderful panacea. Even the smell of onions is sleep producing and if eaten they are a tonic. I once heard a doctor say that if people would eat onions once a week they would have less need of a physician. Roasted onions applied on the outside of the neck have saved me doctor's bills in severe cases of quinsy. I came from my boarding place in the city so bowed down with ill health, I had no heart in anything, and if I should say which one crop was the best for a sick person to raise I would say onions. However, while raising onions one can raise many other vegetables.

The garden commences when the seed catalogs commence to come. The seeds are selected at this time. Do not buy the cheapest, but get the guaranteed seeds. When the ground is not frozen it is well to get some good rich dirt in the house; then the seeds for early vegetables may be planted in the house.

At the writer's home the box in which they are planted is placed on the heater in the cellar until the seeds break thru the dirt when they are taken from the cellar and placed in a sunny south window. When they are large enough they are transplanted to the cold frame and there they continue to grow until all danger of frost is over and they can be set out in the garden.

The garden should be cleared and made to look neat in the fall. All insect harboring vines or rubbish should be burned and the garden covered with a heavy coat of manure. The first thing in the spring the ground can be plowed. When the furrows are finished, with rake and hoe in hand a woman can find pleasant and profitable occupation. The dirt must be mellowed and raked smooth, and straight rows marked out. It is wise to make a plan of the garden on paper during the long winter evenings and plan just where you will plant different vegetables.

Peas are the first to be planted as they are not afraid of frost. The vines can be well up before the last snow has come and gone. The onion seed can and must be sown early to insure the plants maturing from seed, if it is desired to get them from seed rather than from sets. The time for planting lima beans must be watched with the utmost care. To one with little experience it seems all a lottery, but by careful observation from year to year, much may be learned. I have started several hills of lima beans in bottomless tin cans in the cold frame and as soon as all danger of frost is over they can be slipped out of the cans, if watered well before handling the earth, and when placed will not show they were moved. In that way we have our first mess of lima beans 10 days or 2 weeks earlier. We never tire of them from that time until frost comes and kills the vines in the autumn. When we have warning of frost we pull the vines and carry them to shelter and thus save the beans. The surplus beans from 7 rows (Fordhook Bush potato limas), 135 feet long, brought a profit of $12. The season of 1910 was the first season during which we raised all bush lima beans, and they proved so satisfactory that double the amount has been planted since.

The two rows of rhubarb are 135 feet long. It is heavily mulched in winter and we have the very earliest found out of doors. The surplus sold from these two rows has amounted to as high as $25 a season. After the first freeze in the fall, a few roots are dug up and carted to the heater cellar where the mild temperature causes the stalks to commence growth immediately. It is watered occasionally and in a few weeks the beautiful pink stalks spring up and we have rhubarb all winter. The darkness of the cellar prevents leaf growth and the stalks are far more beautiful than any grown in the field. It grows so quickly it is very tender and brittle.

Celery seed is sown very early and only given a slight covering of dirt and then a thin layer of salt hay. As soon as the seeds commence to sprout the hay is taken off. It is a great saving to raise your own plants and the surplus plants from the ounce of seed usually amounts to about ten dollars, selling at the rate of 25 cents a hundred. Celery is a second crop. The plants are set out where a crop of potatoes, onions, beets or early corn has been harvested. Aside from having delicious celery for the home table from the first of October to the last of March, about $50 worth is sold from the ten or twelve rows 150 feet long. One season $75 worth was sold.

Three 150 foot rows of parsley from one ounce of seed, garnished dishes for the home table, the neighbors' tables and brought in $3 per row from what was not given away. Four plantings of corn, two or three weeks apart, keep the home table supplied with boiling corn thru the season. Oh the joy of always having the tender, juicy ears plucked from your own raising!

How eagerly we await the ripening of the earliest variety of strawberries. With an early and late variety we make the strawberry season as long drawn out as possible. Following the strawberries come a few rows of blackberries and raspberries. When the snow was falling in January we were still picking from our last year's garden, celery, salsify, brussels sprouts, spinach, turnips and parsley, as they are all cold weather crops.

We have less than an acre counting house and barn, flower garden and vegetable garden. There is one large apple tree which is a treasure. When the wind blew it down we had it pulled up and braced, so that it went on bearing fruit. We never sell any apples. When there is a surplus we have them made into cider, and thus we have our own vinegar. We do not wish to shade the land with big trees, so we planted a dozen dwarf pear and apple trees. Each year I can 250 quart cans of fruit and vegetables and 100 cans of tomatoes from our surplus.

By a little extra care we have the very earliest tomatoes, the plants being in blossom when they are taken from the cold-frames, and we have fresh tomatoes for the table until after New Years.

Our chicken yard is limited in space, as it would not be wise to allow the chickens the liberty of the garden. The little flock does good work when eggs are 50 cents a dozen, but we do not sell any that we can use in the home. We intend to install the Skinner Irrigation system to regulate the rainfall and add materially to the freshness, the profit and the productiveness of the soil.—Cora J. Sheppard, Cumberland Co., N. J.

TOMATO CULTURE

For the successful growing and ripening of tomatoes a sandy loam provides

The Accurate Seeder
Bumper grain crops depend primarily upon the seed bed. The old reliable
Pennsylvania Grain Drill
has positive force feeds, low down construction, chain drive, extremely simple throughout. Just the drill for long years of hard service with minimum expense for repairs. Made in all standard sizes, fertilizer and plain, with either hoes or discs. WRITE FOR FREE CATALOG.
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Set Plants QUICK
No Stooping An astonishing labor saver.
Actually does three men's work easily. No lame back—walk upright.
Masters Plant Setter
Sets, waters, fertilizes and covers every plant. Transplant tobacco, tomato, cabbage, sweet potatoes, etc.—save tedious labor—get full stand—better quality crop. Saves cost every day used. *Guaranteed.* Write today.
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A FARMER'S GARDEN
Helps his wife to plan her table in busy times. Saves work and worry, saves buying so much meat, gives better satisfaction to the help. A good garden will be almost impossible in your busy life without proper tools. They cost little and save much hard work.
IRON AGE WHEEL HOES AND DRILLS
will sow, cultivate, ridge, furrow, etc., better than you can with old-fashioned tools and ten times quicker. A woman, boy or girl can do it. Can plant closer and work these hand tools while the horses rest. 38 combinations from which to choose at $2.50 to $12. One combined tool will do all of the work. Ask your dealer to show them and write us for booklet, "Gardening With Modern Tools" and "Iron Age Farm and Garden News" both free.
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Wahrheim Farm Strain Jersey Yellow Selected for shape, size color, and productiveness. Guaranteed free from black and stem rot. Send for circular and testimonials.
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80c Standard 3 ft. x 6 ft. and 3 ft 2 in. x 6 ft made for glass to putty in or for glass to slide in. GLASS 6 x 8, 8 x 10, 10 x 12, 10 x 14 at $1.50 per box.
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(We ship lime from 100 Mills)
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saved from selected tomatoes. Sent postpaid for $1.00 per pound. If not as good as any you can buy, return and your money will be refunded. Why pay more? Penrose Seed & Plant Farm, W. P. Drake, Dover, Del.

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GRAIN AND HAY MACHINES
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WITH an International Harvester disk harrow the ground is so prepared that it stores away and holds the moisture from snow and early rains, liberating it to the roots of your growing crops at the time when they need it most.

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of any farm improvement which is built for continued use. A seeming saving in first cost may be entirely wiped out in up-keep expense within a few years and the improvement then becomes an item of expense instead of one of economy.
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enables every farmer to build improvements that are good for all time at a low first cost and with up-keep expense eliminated. Barns and other outbuildings, silos, cisterns, water-tanks, foundations, walks, fence posts are only a few of the many farm uses for good cement. Your dealer has Dexter Portland Cement or can get it for you if you insist on having the best.
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ONION SEED. Yellow Danvers, Large Red Wethersfield, $1.10; Yellow Globe Danvers, $1.25 per pound postpaid.
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Write for Seed Catalog and Free Trial Pkts. of New Enkhuizen Glory Cabbage and New Triumph Radish
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Every fruit grower, gardener and farmer who reads this paper should get a copy of this free book. Describes Allen's true-to-name varieties and gives valuable information on
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Hundreds of standard varieties of carefully grown Strawberries, Blackberries, Raspberries and other small fruits for every soil and climate. For 29 years Allen's plants have been leaders. All plants shipped from carefully selected fresh stock and packed to arrive in good condition. Write today for THE 1914 BERRY BOOK.
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ALLENS BOOK OF BERRIES 1914

the most favorable soil conditions; that is if it is not impoverished by excessive cropping and insufficient feeding. That they can be successfully grown upon such soil, but with indifferent success upon gravel, wet clayey soils or after sod, we know by experience. To prepare the land for tomatoes, it is well to give it a broadcasting of well-rotted manure, plowing this under and harrowing the surface fine and smooth. The field is then marked off with a furrowing sled set for a distance of four feet between furrows in one direction over the field and four and one-half feet between the intersecting furrows. This give hills at convenient distance for growth and cultivation. A handful of some good fertilizer in the hill gives better results than a shovelful of manure. This formula recommended by the New Jersey Agricultural Experiment Station worked successfully with tomatoes on loamy soil:

150 pounds of Nitrate of Soda.
100 pounds of Muriate of Potash.
150 pounds of Dried Blood.
600 pounds of Acid Phosphate.

Here is a good one for late tomatoes:

150 pounds of Nitrate of Soda.
250 pounds of Bone Tankage.
300 pounds of Acid Phosphate.
300 pounds of Muriate of Potash.

For the early tomatoes more potash than is recommended in the first formula given, gives better yield.

The plants to be set for early bearing should be planted by May 10th. They should be stocky and vigorous and from six to eight inches tall in the bed or greenhouse where they were grown. In this locality, hot-house or hot-bed grown plants may be had in boxes for fifteen dollars per thousand.

They should be handled quickly and in cloudy or moist weather, if possible, and set an inch or an inch and a half lower in the hills than they were in the beds.

It facilitates the work very much to have the furrows in one direction opened with a one-horse plow, a man following and dropping a handful of the fertilizer in each hill or point of intersection with the cross-furrow. Behind these goes the planter who with his short-handled hoe or other tool quickly covers the fertilizer, sets the plant above it and draws the soil about it, firmly pressing the earth about its roots.

As soon as the plants are set cultivation should begin, to stir up the soil where the tramping of the planters has packed it, continuing once a week until the vines are too large and spreading to allow the cultivator to pass readily between them. Disturbing the feeding roots with the cultivator may mean great loss in yield after the plants have reached this size. A mere surface scratching with a straight-toothed cultivator set very shallow is safest.

After the plants have been out about a month—say about June 10th—an application of nitrate of soda, using a handful to every three plants will be found very helpful. It is applied on the surface near the plant but not touching it. Occasional hoeings are necessary about the hills to remove weeds care being taken not to cut into the hill.

A sufficient quantity of the above-mentioned fertilizer applied in the hill will cost in the neighborhood of $19 and the later application of nitrate of soda will cost about $10 per acre.

Tomatoes for late bearing should be set from June 10th to June 25th. Small plants set out about June 10th give better results than large plants set as late as June 25th.—M. Robert Conover, Monmouth Co., N. J.

THIS YEAR'S CARE AND NEXT YEAR'S ASPARAGUS CROP

During the cutting season, the asparagus root has been continuously taxed, the early shoots forced up by the plant for its own use having been taken. All this the plant must regain during an unmolested growing season following the period of cutting. Such is the redundancy of the asparagus plant that it will do this and in addition, add to its root stock, so that more yield may be expected of the bed each ensuing year if the cutting period is not unduly prolonged.

Because uninterrupted growth during late summer is vital, the processes of fertilizing, cultivating, etc., must be carried on regularly. If a good fertilizer is applied when the ridged bed is plowed down, the roots will get it in short order and the regular cultivation will insure its even distribution.

As soon as the spears come up after plowing off, cultivation should begin, using either a one-horse or two-horse cultivator. This cultivation should continue regularly so that the surface of the ground is at all times mealy and loose.

As the season advances, it will be necessary to throw toward the plants a furrow of earth and still later another. This serves as a support, helping to keep the top erect as the tops spread and sag and winds wave the stalks back and forth, straining at the roots. Stalks supported thus are less likely to be injured by the passing of the horse and cultivator.

During this period the rootstocks are adding to their bulk by prolonging the main root. When this addition is well under way, up comes a sprout from close to the older portion. This sprout partly supported by the old and new growth and working to promote the growth of the new, is the visible sign of advance, a proof of new root formation and the means of its continuance.

Over a bed of asparagus in full feathery foliage, this new growth can be noted by its contrast of lighter green color. This new growth occurs in successive periods as the general conditions of cultivation, fertilization, moisture and warmth, favor its development.—M. R. C., Monmouth Co., N. J.

MANURE FOR YOUNG PEACH TREES

We have a peach orchard consisting of 240 trees, some of which have been producing fruit for 20 years. Most of these trees have been planted in the last few years. We practice clean cultivation, also spray yearly with home boiled lime-sulphur. We have never used fertilizer, except barnyard manure, which we use yearly. The trees are the picture of health, and are doing finely, yet we have been told manure will injure the trees and cause them to die sooner or later. Please let us have your opinion.—J. S. C., Brick Church, Pa.

I do not agree with the theorists who say that barnyard manure will injure trees of any kind. I own large orchards in Pennsylvania, some of which have been producing commercially for 7 years. I have not yet seen any evil results of barnyard manure judiciously applied. I use it on all fruit trees when needed and when I can get it. Two important points must be remembered concerning its use: One is that if the trees are growing rankly it should be discontinued, as they do not need it; and the other is that where there is blight prevalent apple, pear and quince trees are more liable to be blighted with fire blight, black blight or pear blight, when manure is used around them than when they are not manured. These are the only two conditions of injury from this source that I see. Also manure may be applied so late in the summer as to induce new growth that may freeze easily. If the trees have not grown sufficiently rapidly nothing better can be done for them than to manure them. Of course, under such circumstances cultivation is also beneficial, but much depends upon your method of orcharding. Good sod mulch combined with manure is excellent for apple trees, while cultivation is probably best for stone fruits. I can recommend manure on peach trees where the growth is not already too rank. I do not use it nor recommend it on any kind of trees where the soil is especially fertile or damp and the growth is rank.—H. A. Surface.

FARMING LIKE MANUFACTURING

In many ways, farming is similar to manufacturing. The farmer has a "plant"—his farm—and he may operate it to make a dividend, or permit the overhead expense to eat up all the profit. He may waste part of his material, or he may utilize it. He may get full value out of his animals and his fields, or he may get only part of what they should produce. The manufacturer succeeds best when he plans his work, uses machinery and sells a completely finished product just as the farmer succeeds best who does the same. The advertisements in the Pennsylvania Farmer will help you farm better, if you make use of them. Many things are offered that will make your work more profitable.

"For the land's sake, use Bowker's Fertilizers; they enrich the earth and those who till it."—Adv.

Does the Fertilizer You Buy Enrich Your Soil for Future Use?

If it does not, you are not buying the right kind of fertilizer. READING BONE FERTILIZERS, being made up from ANIMAL BONE, BLOOD and TANKAGE, not only nourish the crop to which they are applied but enrich the soil for future use and bring the farm on which they are used up to a high degree of fertility. This is the reason why constant users of Reading Bone Fertilizers grow prize winning crops.

500 Bushels of Potatoes
100 Bushels of Oats, and
160 Bushels of Corn

to the acre were grown by users of Reading Bone Fertilizers. Made up by a Company composed of ONE HUNDRED GOOD PENNSYLVANIA GERMAN FARMERS.

In justice to yourself and your family it is your duty to buy the best fertilizer and it will pay you to buy Reading Bone goods. THE PROFIT ON THE FARM IS IN THE SURPLUS BUSHELS.

READING BONE FERTILIZER CO., READING, PA.

Write us for prices and terms, or consult our nearest agent. P.S. Goods endorsed by the Honorable William T. Creasy, Master of the Pennsylvania State Grange after a thorough investigation into the merits of various makes of Fertilizer offered for sale in the State of Pennsylvania.

THE IMPROVED RIGGS MARKER

A machine every Farmer ought to own. Made in two sizes. Two and three row. Makes every furrow exactly alike. Will not clog in manure or trash of any kind. Very light, yet strong and durable. Makes any depth or width of furrow. Many thousands are in use.

PRICES

Two row with Looseners	$ 9.00
Two row without Looseners	8.25
Three row with Looseners	12.00
Three row without Looseners	10.50

Shipped knocked down at low freight rates.

We also manufacture THE IMPROVED RIGGS PLOW and THE PERFECTION 6 ROW SPRAYER.

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Take your walking plow—any make, any style—and fit it with the WINNER PLOW TRUCK That makes a regular sulky that any boy, who can drive, can plow with as well as you ever could. Special Introductory Offer in New Territory. Write today. You may use the WINNER 10 DAYS before making up your mind. If you don't like it then, we'll return your money and pay freight both ways.

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Never out of order. Saves three times the labor of any other sprayer used for spraying disinfectants, whitewash and other uses. Send for Circular P.

AMERICAN TREE SPRAYING CO.
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RAW GROUND LIME.

The only form of Lime that you can safely use in your stable gutters for an absorbent. Prompt shipments

F. E. CONLEY LIME & FERTILIZER CO.
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TAPES RED AND BLUE, fast color, for Bunching Vegetables, Celery, etc.

Prepare your products attractively, and create a demand for them. Ask for samples.

WICK NARROW FABRIC CO.,
Producers of Specialties.
933 Market St. Philadelphia

Man Wanted to work on general farm. State age, height, weight, experience and wages expected. R. A. EROH, Rt. 1, Weatherly, Carbon Co., Pa.

PLANTS POSTPAID TO YOU. Mammoth Blotched Pansies, Doz. 35c. Cauliflower, Pepper, Doz. 12c. Cabbage, Tomato, Doz. 10c, 100, 65c; Celery, Lettuce, Beets, Asters 4 Doz. 25c, 100, 35c. All Varieties. Safe Delivery Guaranteed. Glicks Plant Farm, Smoketown, Pa.

30c WINDOW SASH. Glass 6 x 8, 8 x 10, 10 x 12, 10 x 14, at $1.50 per box. Let us figure on your building material.
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Siberian Seed Oats. Highest yielding variety at Ohio Experiment Station 71.33 bu. av. yield for 9 yrs. Strong hardy grower. Free from smut. One bu. $1. Two or more bu. at 80c. Samp. free. H. E. Moats, Jamestown, Pa.

Strawberry, Raspberry, all small fruits & shrubbery plants. Berkshire pigs and Collie pups. H. H. CORSON & SON, Avondale, Pa.

STRAWBERRY PLANTS, BIG PRODUCERS. New Tested Varieties. Catalog Free. L. G. Tingle, 77 R. R. Ave., Pittsville, Md.

Cedar Shingles $7.50 Thousand

And up. 24 inches long. Delivered to your railroad station. Samples and further information on request. All orders shipped subject to approval and acceptance.

Also cedar lath and siding.

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and learn how thousands of Spalding Deep Tiller users, with 12 to 16 inches deep, well pulverized and mixed seed-beds, got good crops during the last summer's drouth, when neighbors' shallow-plowed crops burned up.

Take advantage of their experience and write today for information about the Spalding Deep Tilling Machine, or see your dealer.

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FRUIT TREES AT WHOLESALE PRICES.

Peaches, $4.50 per 100; Apples, Pears, Cherries, Plums, and Ornamentals. Everything fresh dug and Guaranteed strictly first-class. We pay the FREIGHT. Send for Catalogue to-day. L'AMOREAUX NURSERY CO., Schoharie, N. Y.

"Cow Efficiency"

Measured by the Cow Testing Association.

By DAVE K. SLOAN, Canton Farm Bureau, Bradford Co., Pa.

Records of milk and butter production of various individuals of the dairy breeds show that 1,000 pounds of butter per cow per year is no longer considered an impossibility; but merely an increased efficiency of the dairy cow. It is readily granted that methods applied to reach the 1,000-pound mark would not apply to the vast multitude of commercial producers that are feeding the world this very essential commodity. However, the commercial producer, better known as the average farmer, will eventually feel the result of this increased efficiency. The offspring from record cows will be available as a nucleus of better seed to increase the profit of their grade or purebred herds. For this reason it is indeed essential that the dairymen keep sight of these high butter marks and take advantage of any of that blood from which he might produce a more efficient cow. A world's record breaker was not produced in one year in an off-handed manner. She is the ultimate result of untiring effort along the lines of "Production Records and Pedigrees," blended with wise herdsmanship.

MAGGIE CONCORDIA 110514. HOLSTEIN COW

Owned by H. C. Gates, Bradford Co., Pa. Produced 96.1 lbs. butter in one month and leads the Association to date.

The above feature, namely "production records," has indeed a very significant place for detecting the powers that make possible these records, as conformation and pedigrees alone do not offer a sufficient clue. The co-operative cow-testing association is the organization that gives the dairyman this information in the best form and at the least cost. Doubtless the association accomplishes the most by pointing out the cows in the herd that are being kept at a loss, but it also possesses other features of equal importance.

Many members of the Western Bradford County Cow Testing Association actually knew that they had no boarder cows, but still realized that there was a great variation even among their profitable ones. In order to increase the efficiency of their herd they are desirous of retaining only the most profitable individuals as "seed" for the "coming generation." Why do they demand this increased efficiency? Simply because they well realize that the dairy business is subject to changes in policy, markets, methods, etc., and in order to meet these changes, the cow that was once profitable, now should be disposed of for beef.

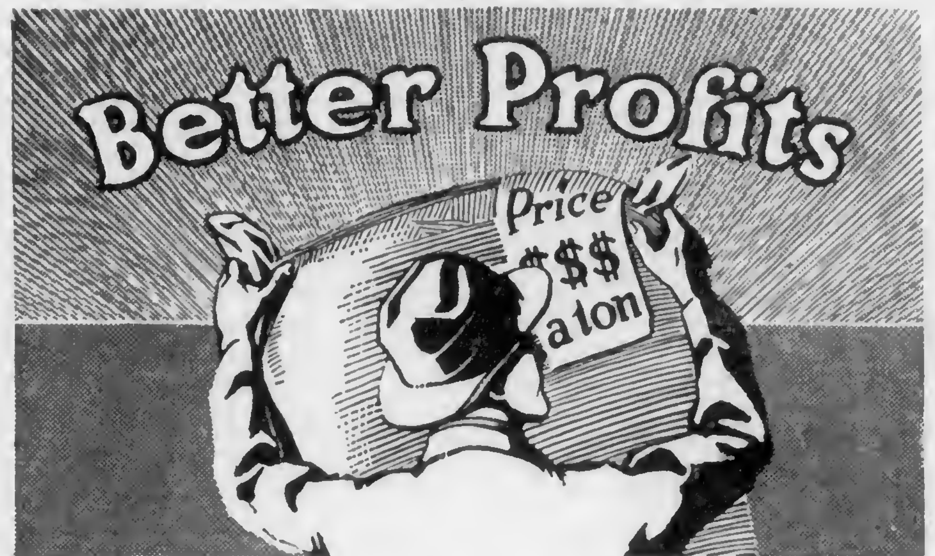
Even tho the table submitted shows cows of equal age and calving period, it points out conclusively that animals have a wide range in efficiency for profitable production. The careful study of the record book which each member possesses often reveals the fact that cows have not the same ability to utilize even more food at a profit.

	Cost of feed	Profit above feed
Cow number 1	...$3.63	$8.00
Cow number 2	... 4.65	9.12
Cow number 3	... 8.23	10.25
Cow number 4	...11.12	4.93
Cow number 5	... 6.46	5.34
Cow number 6	... 8.42	14.86

The past success in dairying was due to the great amount of rough lands used as pasture. Pastures fed the cow from the time she freshened in April or May until she gradually dried off in December and was wintered on rough feed to await her calving time the next spring. Such methods did not demand high-priced feeds and barn equipment. As it now is, the pasture method is not sufficiently complete to give the necessary profit, and the farmer is compelled to supplement his past methods with better cows and other feeds. This fact makes permanent the profitable use of corn silage and concentrated grains for the winter as well as the summer. Winter dairying not only obtains better prices for the products, but offers better distribution of farm labor and affords a more systematic handling of the manure which is a very essential part of permanent fertility.

The Western Bradford County Cow Testing Association started work July 15, 1913, with 33 members as owners of 600 cows. The price charged for testing was at the rate of one dollar per cow per year, which practically finances the association. In addition to this, several minor contributions have been received which have made possible the low rates. This number of cows in so many herds has demanded very thoro and competent work on the part of the tester. That position in any association is one of very much importance as the tester in a great way directs the work of an association. He surely must have an intensely flexible dsposition in order to agreeably fit into the thirty-three homes he visits each month. In this respect this association has been very fortunate in its relations.

This association is strung out over a section of the county about fifteen miles long and about four to six miles wide and covers a very intense part of the dairy industry of the county. The present plan is to reorganize next year with not more than 500 cows in not more than 28 herds. This plan will of course demand a higher price per cow. In connection with the association there is published each month a list of all those cows that have produced 40 pounds or more of butter fat. This roll of honor is a stimulus for better methods and better cows, and serves as a quick classification for the interested observer and dairyman. For the past seven months there have been from 25 to 42 cows each month that merited such classification.



Look Beyond the Price!

Lowest priced does not always mean cheapest. Don't you know the real cost depends upon results obtained?

Is a horse cheap that can't work? Is a tree cheap that bears poor fruit? Is seed cheap that produces a small yield?

Some things are "dear at any price." When it comes to feed for your cows, the saving of a few cents on a bag may lose you three times as much in the value of milk produced. Look beyond the price tag. You feed your cows to get more milk and lots of it, and if the cheap feed does not produce the milk it's a dear feed.

Larro-feed

is one of the highest-priced dairy feeds made, yet it's the *cheapest* for you, because Larro-feed will more than pay, in increased milk flow, the extra price over any other you can buy or mix yourself.

It will cost you, on an average, 20 cents per bag more than other feeds. That means 2 cents a day per cow if you use 10 lbs. daily One additional pint of milk per day is all you need to make up that difference.

Cut out the "too high-priced talk." Small feed bills often mean small milk checks. *Profits* are what count—and we guarantee better profits from Larro-feed than from any other feed you can use.

If you believe in spending an extra dollar to get back two, you'll say "Larro-feed" to your dealer today, or write us direct.

The Larrowe Milling Co., 634 Gillespie Building, DETROIT, MICH.

Makers of Larro-feed

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FOURTH CONSIGNMENT SALE
180 - HEAD - 180
SYRACUSE, N. Y.
April 14-15, 1914

From the entries received, it is certain, that this will be the BEST SALE OF THE SEASON. All sound animals of very superior breeding. Animals that will improve any herd. All tuberculin tested.

Some of the best breeders in the country are sending their "GOOD ONES" to this sale. Plan to attend.

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Improvement of Permanent Pastures.---No. III.

By JOHN H. REISNER, Cornell University.

Reseeding Pastures

Reseeding will prove a profitable practice, especially where the sod is thin or where different plants are desired in the pasture. The investment per acre should not be large and care should be taken in the seed or the mixture of seeds to be sown. The conditions calling for partial reseeding would probably be such as to demand pasturage for the same season and clovers would be introduced for quick results and the other grasses would mature more slowly, such as timothy, blue grass and the fescues. Mixtures and their relative values will be taken up in detail later on. Our chief consideration is that this is a practically sure method of improvement, other conditions being favorable, and can be applied to almost every class of pasture land when needed. This practice would call for the seeds being sown in some cases in the early fall if the land were not grazed and the winter not too severe for the grasses to be planted. More often it would need to be done in the early spring when the seed would be broadcasted on the open ground before it had compacted after the last thawing of the soil. It can also be practiced after cultivation, either surface or deep, a consideration of which will now be taken up.

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Cultivation

The last method of improvement to be considered is cultivation, both shallow or surface, and deep. Surface and shallow cultivation can be followed by partial reseeding. Deep cultivation would be followed preferably by a cultivated crop and then reseeding with or without the use of a nurse crop. The type of cultivation would be determined by the conditions of growth in the pasture and by the topography of the land. Shallow cultivation lends itself fairly well to nearly all lands. The steeper slopes, where cultivated crops can not be grown on account of washing and the land too rough for extensive crops that must be harvested with machinery, can be cultivated without danger of injury from washing, with spike tooth or disk harrows.

Lands of the above types should usually be reseeded at time of cultivation. If the lands are so rough as not to permit the use of farm machinery, the seed can be worked into the ground by the use of brush harrows. Further, our best pasture lands can be improved in the same way. Often on these reseeding may not be necessary or advisable. The effects of shallow cultivation are first that it breaks up the "sod-bound" condition often observed in our better located pastures where the soil is heavy; second, it allows aeration and betters the physical condition of the soil; third, it distributes the droppings of the cattle; fourth, it decreases run-off of rainfall and increases the catch of rainfall; fifth, it affords a seed bed for seeding and more favorable conditions of growth for the new plants.

When reseeding, shallow cultivation, cutting down weeds, addition of soil fertility and other methods fail, the pasture may be plowed up and planted to a cultivated crop which is corn, by preference. Before plowing, if it is available, a heavy application of manure is desirable. An application of lime some time early in the period of cultivation should be made. The corn should be cultivated thoroly not so much on account of the yield, but on account of its effect on the soil and to make sure that the weeds have all been killed—a second or even third cultivated crop may be necessary. The methods of reseeding must largely be determined by local practice. Whether or not a nurse crop is to be used at all or what the nurse crop is to be, must be decided by the owner. We should not forget, however, whatever the local practice may be, that reseeding should not occur until the weeds had been all destroyed, the soil put in good tilth and in as high a state of fertility as possible, and that a fine firm seed bed is desirable on most soils. However, clay seed beds require a rough surface and more seed sown. Where the pasture is to stay down for a long time, the soil good and a good mixture of grass seeds is to be used, and climate and soil conditions permit fall planting, the nurse crop may be advantageously omitted.

Successful Holstein Sale.—The Liverpool Sale and Pedigree Company at a sale at Syracuse, March 10, sold 214 head of Holsteins for a total of $62,455, or an average of $292 per head. J. A. Miller, of Nazareth, Pa., paid the record price of the sale in the purchase of the cow Springdale Ononis Vale for $1,750.

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Live Stock

HOGGING DOWN CORN

The Pennsylvania State College is now preparing a bulletin from some very interesting data collected in a recent experiment on "hogging down" corn. This subject is one in which very widespread interest is shown. It has been the basis of much discussion. A few years ago, "hogging down," or the turning of pigs into the field to harvest their own grain, was considered bad farm practice. The best farmers looked upon the system as slovenly and wasteful. Today opinion is changed, and in some localities this method is much approved. In the corn belt "hogging down" is recommended as the most economical way in which to produce pork. However, conditions in the East and West vary materially. What our farmers wish to know is whether the system will or will not be practical for them. The results of the experiment have answered this question.

From a standpoint of economy, the animals under the "hogging down" system required less labor than those fed by ordinary methods. They showed better thrift and higher condition than those fed dry grain. At the end of 10 weeks the hogs fed in the corn field showed an increase in weight which was 20 percent greater than that of the dry-lot animals. The gain was also made more economically. By "hogging down," a gain of 12.3 pounds to each bushel of corn fed was made, while an equal amount given as grain produced 11.6 pounds. At the close of the experiment the field had been well harvested, with but little loss. The fertility of the land was of a higher degree than under ordinary methods of harvesting, for unconsumed leaves and stems, as well as the droppings, had been returned to the soil. The system was best for the man, for the hog, and for the land.

In order to obtain the best results from this practice, a few fundamentals must be observed. To avoid a sudden change of diet, small quantities of new corn are first fed for several days. The hogs are then turned into the field just as the corn is beginning to dent, and they are left there except in wet weather. The area should not be larger than they can eat down in three weeks, or grain will be wasted. An acre yielding 60 bushels will keep twenty 125-pound pigs for such a period. In order to obtain a balanced ration, it is well to sow cow-peas or soy-beans in the corn at the last cultivation. The fattened animals should be sold as soon as they are taken from the field for they may lose weight when put on a new diet.—Rush P. Marshal, State College, Pa.

FIVE MORTGAGE LIFTERS WHOSE COMBINED DRESSED WEIGHT WAS 1976 POUNDS.

Raised on a Lancaster County Farm.

"MAD STAGGERS" IN HORSES

The Department of Agriculture at Washington has called my attention to a serious disease which has caused the death of a great many horses in our country which, with a little care, could easily have been avoided. Technically, this disease is the Cerebro-spinal Meningitis. It is commonly called "head disease," "mad staggers," etc. The symptoms are a muscular twitching of the neck and flanks, grinding of the teeth and colicy pains. If permitted the animal will walk at random, sometimes in a circle and will try to push thru any obstacle with which he comes in contact. If in the stable he will press his head against the stall or rest it on the manger. The second or third day he will lie down and will not get up. Sometimes he is practically paralyzed, and, at other times, his legs make the motion of trotting or pacing. The death rate is very high. Very little can be done to cure the animal. There are many patent medicines on the market, few of which are effective. The main thing is to clean the digestive tract thoroly. If necessary, use calomel, and, of course, give the animal good care, such as blanketing, etc. The disease is not contagious.

This is one of the diseases where prevention is the key to success rather than the cure. It seems to be caused by the eating of fungus on the fodder. It is likely to occur where the horses have been allowed to eat hay that is a bit mouldy. One or two instances have been brought to my attention where it has been caused by a damp manger and the moulding of the food which has dropped thru or laid in the corners of a poorly constructed manger. The horses seem to have an appetite for this form of fungus and will go to considerable inconvenience to lick it out of the corners of the manger or from the dark places underneath the manger. It has also been caused by wet spots in the pasture field where fungus has accumulated upon the grass in the vicinity.

The loss of our horses from this is so great that we must give it serious consideration. Look out for the leak in the roof which may cause moulding of the hay. Make sure that the stables are dry and that feed does not accumulate in any part of the manger or under the manger, and that the supply of water is reasonably pure. In case there is more than one animal with this disease you may rest assured that it did not pass from one animal to another, but came from the same source. Attention should be given immediately to the feed that the horses get.—Prof. F. R. Stevens, in L. V. R. R. Circular.

How I Envy Man.

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Philadelphia, Pa., March 28, 1914.

Building Up Fertility

Development and maintenance of soil fertility is every farmer's problem. Much is being said and written in condemnation of wastefulness of soil fertility on American farms. Men with pet theories and others with little or no knowledge of practical methods are continually harping on the need of more efficient conservation of fertility. They forget or never recognized the fact that the farmer's first duty as, indeed, his first necessity, it to make a living for himself and family. We believe that the farmer who is not operating his farm today with a view to maintaining if not gradually increasing the productivity of his soil is a rare exception. Certain it is that the farmers as a class are giving far greater attention to such conservation than are those who are annually decreasing the supply of other natural resources, such as lumber, coal, oil, minerals, etc. But farmers are from necessity making slow progress, as they are working with restricted capital and always with the necessity of taking from their soil enough to provide a living. Again, they are working with natural laws whose returns come slowly; too slowly for many people to maintain patience and interest. Much of the scientific teaching on this point has tended to discourage rather than assist the great mass of farmers. The soil building program that calls for heavy applications of stable or commercial manures, returns of heavy soiling and cover crops to the soil, purchase of quantities of lime, etc., is all right for the man who can afford it, and will bring quicker results where practiced, but it is out of reach of many of the men who need building-up methods. The series of articles now running in our Farm Crop Notes department discuss natural methods, and take up the development measures which are available to all farmers. They give hints on better ways of doing the ordinary operations in crop production and outline methods of securing full production and still leave the soil in a little better condition for succeeding crops. The natural methods will not give results as quickly as will the more extravagant systems, but they are sure and are within the reach of the actual, practising "shirt-sleeve" farmers; the class that produces the great bulk of our food products and that has in its charge the care of the great bulk of our farm lands.

Farm Independence

We all hear much about the trials and tribulations of the farmer. Admitting that the life of the tiller of the soil has its drawbacks, we must not lose sight of the fact that all vocations are more or less hedged in and have their limitations. It is often argued that the farmer's income is an uncertainty and dependent upon so many uncontrollable factors. The city man on a salary does have the advantage of knowing just what he may depend upon from month to month, but he is fortunate, if under present living conditions and the cost of foodstuffs and other commodities he can make his pocketbook fit his needs. With the farmer there is always a certainty of a livelihood. Commenting on this point a recent bulletin of the Department of Agriculture has the following to say: "The uncertainty of the farmer's cash income, however, is more than offset by the certainty of a livelihood and the sense of permanent security afforded by ownership or a long-term lease of the farm and equipment, and the fact that he is his own employer and does not have to make cash payments at frequent intervals for his house rent, water, fuel, and a large part of the food of his family which are supplied by the farm." Few occupations offer the independence enjoyed by the farmer. He is his own boss, and is responsible to no one but himself. His is the normal life, lived as it is, so much in the open. He enjoys the fruits of his own labors as few others are permitted to do and at the end of a season's toil the sense of achievement, of "something accomplished, something done" brings with it also the true joy of life. Such is the satisfaction accruing from earnest, constructive labor. The farmer's life is far from being a bed of roses, but it has its share of the compensations of life.

Cattle Feeding

Because of the increasing interest in cattle feeding in the East the first cattle feeders' convention, to be held at the Pennsylvania State College, April 3, should have the hearty support and co-operation of the farmers of the state. The primary object of this convention is to foster interest and give instruction in profitable feeding of beef cattle. The sixty head of steers which have been on feed in Station experiments during the winter will be on exhibition for purposes of study and comparison. The authorities in charge will explain methods of feeding and present data on costs, gains and profits, and an experienced cattle buyer will appraise the various lots according to market value. Thus the visitors will be able to gather all of the desired information on the season's feeding in one brief day. The experimental feeding has been done with the specific view to determining methods nd rations most economical under the prevailing conditions of this state and section. The lessons will be of vital interest to every cattle feeder of the East. It has been shown repeatedly that profits in feeding depend upon type of cattle selected, cost and value of feed consumed, the compounding of rations from which the cheapest pound of gain can be produced, proper housing and following with hogs to consume waste products. All of these points will be demonstrated at the coming convention. Mastery of these points means more and better cattle, greater profits on more animals to be turned off at present high prices. These prices, which are practically certain to increase in coming years, make beef production on a small scale, at least, attractive to eastern farmers. The feeders convention should prove a very helpful factor in directing increased attention to this branch of farm work.

Farm Accounting

If farming is to be based upon the broad business principles characteristic of every other successful industry it is necessary that the farmer know how much he is making or losing on his business each year; how much he is making or losing on each crop or class of animals, and how he can improve his business so as to make more money. To this end he should keep a set of farm cost accounts. It is possible that some farmers are desirous of keeping accounts of this sort but do not know how. For any such Bulletin No. 572 of the Department of Agriculture may solve a problem. While farm cost accounting naturally involves many estimates, this should not discourage the starting and continuance of the book keeping incident to cost records. It is not expected that these records can be absolutely exact. The systems of accounts used by large corporations involve as many estimates as would a simple system of farm accounts and the former do not give any more accurate results than do the latter. An easy system outlined by the bulletin referred to involves, according to answers on time estimates received from farmers who have used it, anywhere from 2 to 10 minutes, with an average of about five minutes, for the daily entries. To this is added also the number of hours of work at the end of the year to balance the accounts. With a plan free from complexity, no bookkeeping knowledge is necessary. Farm accounts should start on the ordinary farm some time after the last crop is harvested in the fall and before the first crop preparations are started in the spring. The exact date must be a matter of judgment and will depend principally upon the type of farming practiced. Whatever the plan used, it should be simple, quick and as complete as is consistent with ease of handling.

STATE CAPITAL NEWS

Medical Inspection.—Medical inspection of children of fourth class districts in the State is nearly completed and shows that over 400,000 children have been looked over and the condition of their eyes, ears, noses and teeth noted. About 1800 districts out of 2200 on the list have been inspected this year. When the state began medical inspection, which is optional in third and fourth class districts there was more or less objection because the scope was not understood, less than 400 districts being covered the first year. Results were so beneficial that the following year 1200 districts were covered. The manner of following up inspections is aiding the work. When a child is examined a report is made and a copy given to parents and teacher. Often the state supplies all the medical advice needed and the parent given a report on just what the child requires. Over 2,000 districts should be covered next year.

Orchard Work.—The State Zoologist hopes to have orchard demonstration work for the week of March 30 conducted in fifteen counties and in twenty the following week. The work was started this week in southern counties, some of the northern and mountain counties being included in the first list. Demands for inspectors are expected to be large. When demonstration periods are ended inspectors will give advice on methods of cultivating. They will also aid in building up the proposed index of all state orchards. About 2,100 orchards will be under the direct supervision of the State's field men during the year.

Grade Crossings.—Scores of grade crossings in rural districts of the State are being investigated by the Public Service Commission so that proper consideration may be given their regulation in rules to be issued by the commission. Many grade crossings in cities and boroughs are being eliminated, but virtually nothing has been done in country districts.

More Money For Fairs.—The first steps toward securing additional money for encouragement of State Fairs were taken recently when an association of county fairs formed a year ago held its second annual meeting. The State now gives $100,000 which is divided; $250,000 will be asked for on the ground that every dollar encourages agricultural or stock breeding effort. This association is opposed to the proposed State fair urged last year and accomplished the defeat of the project, notwithstanding strong argument in its favor. It will probably attack any state fair bill next winter and will meanwhile start its move for more money and better rates for transportation of animals for exhibits.

No Clerical Rates.—The long discussed question of reduced rates or free transportation to clergymen has been settled by a ruling that clergymen are not entitled to receive favors under the constitution and the public service company law. This decision will probably govern in many other cases such as hauling coal and other commodities free or at reduced rates for hospitals or charitable institutions, granting of free water by water companies to churches or similar institutions and the giving of free current by light companies.

Little Road Money Available.—Owing to the unsettled state of the controversy over the use of the income from automobile licenses there is little money for the maintenance of the 8,000 miles of state roads. Less than $100,000 is available for this purpose. By reason of this dilatory policy the highway department will go under fire again this year. Unless all signs fail this will be one of the most unsatisfactory years in road matter due chiefly to the phrasing of an act. The officials, who have known of the question since last fall, have not gotten the matter into court for final judicial determination. It could have been submitted in January and probably decided by this time.

Many Raising Catties. — The State Fisheries Commissioner thinks the raising of fish in the country districts of the state for food purposes will probably be greater this year than ever, many demands having been made by farmers for young fish from the state hatcheries. Shipments are now being made and farmers who agree to make reports on how the fish stand being planted in streams will be favored as much as possible. Many people are reported to be raising catfish for food in the southern counties.

Farm Counsellors.—The staff of 10 state counsellors under the state department of Agriculture will start work April 1.

Liability Law.—It is reported that a bill exempting employers of a small number of persons, such as farmers and storekeepers on a small scale, as well as the home, will be drafted.—Hamilton, Harrisburg, March 23.

NEW JERSEY FARM NEWS

Fish and Game Laws and Bills.—Forty-four fish and game measures have been introduced in the legislature this year. Two have become laws. They are House bill No. 124, making it illegal to hunt wild turkeys for five years, and House bill, No. 133, providing that the sum of $50 paid for pound net fishing in the Atlantic Ocean and $10 for each pound net in Sandy Hook or Raritan bays shall be void after December 31, next. The first named law is of especial interest. Years ago the wild turkey was abundant in New Jersey, but is now practically extinct. The State fish and game commission began a year ago to raise birds from several pairs received in Virginia, and about 60 will soon be liberated in pairs, believing that they will multiply rapidly if given protection. The latter law provides that licenses shall expire with the calendar year and will not affect the menhaden industry, of so great importance to the fertilizer and farming interests of the State. Assemblyman Weart's bill making it unlawful for anyone to shoot any English or ring necked pheasant for the next two years, penalty $30 fine, will pass. Extended protection will also be afforded to wild water fowl and other game.

School Affairs.—About sixty measures have been introduced into the legislature having a more or less direct bearing upon school and educational affairs. House bill No. 671, Hammond, would completely destroy the present appointive State board of education consisting of 8 members, serving without salaries, creating in its stead an

elective board, of one member from each county, salary $1,200 each, payable semi-monthly. A Senate bill would take away from the State board of education all power to determine the style, character, cost and location of all school buildings and vest such power and authority in municipal officials. Neither the State board of education nor the State commissioner of education could, under this bill, withhold from any school district any money as a means of enforcing obedience to the State board's rules and regulations. Several other bills are directed against the State board.

State Road Affairs.—Road matters have occupied much of the time of the legislature. Senator Wheaton's bill would make every contractor guarantee a road for a period of 5 years, all contracts for road building to be subject to the provisions of this act. Assemblyman Griffith's bill makes it a misdemeanor to put oil on a highway without covering it with sand. Assemblyman Nutting's bill authorizes adjoining counties to build bridges, etc. No appropriation has as yet been forthcoming for the taking over of the Delaware River toll bridges and making them free. The Pennsylvania legislature has appropriated $100,000 for this purpose, and New Jersey should reciprocate. The members of the legislature are favorably disposed toward an appropriation to meet the requirements of the National Good Roads Bill should it become a Federal Law. The Standard Oil Company will, early in the spring, place on all the public roads in the State, ornamental steel signs, pointing directions and giving the distances to various points, the State road commissioner having approved the project.

Automobile Reciprocity. — Senator Guant, Master of the State grange, is fathering a bill providing for automobile reciprocity on a revenue basis. In a statement he maintains that as many more foreign autoists use the State roads than do residents, they should be compelled to pay some part of the road maintenance expense. He would have foreign autoists in State having reciprocal relations with New Jersey pay a license equal to three-fourths of the fee charged resident autoists. In other States, the fee would be the same as that charged residents. This bill should become a law. Some levy a personal tax upon automobiles. Cities must pave and maintain streets at their own expense. In townships and boroughs roads are built at the expense of the State and counties, cities also contributing part of the cost, in many instances.

Grade Crossing Again.—Maintaining that the Edge bill requiring the railroads of the State to protect their grade crossings is not necessary because ample power now rests with the State board of utility commissioners to enforce the necessary protection, representatives of all the big railroad companies operating in the State are striving to bring about its defeat. Senator Edge has submitted several amendments which make the bill less stringent, but even with these considered the railroad men continue to oppose it. The bill will probably be modified in committee.

Matter of Taxation.—The bill permitting payment of taxes by installments has passed in the Senate. It stipulates, however, that to avail himself of the privilege, a taxpayer must pay at least one-quarter of the assessment at a time. A bill has been introduced authorizing the board of taxation in each county to divide the county into assessment districts before September 1, 1914. This also authorizes the appointment of an assessor in each assessment district, whose salary shall be fixed by the county board; work of assessment to be completed by June 1 of each year; bills to be sent on August 15.

Fire Protection.—House bill No. 576, is in the hands of the committee of agriculture. It creates the office of State fire marshal, the Governor to appoint such official whose term shall run concurrently with the commissioner of labor; annual salary $1,000 and expenses, he to appoint such assistant as may appear necessary. Senate bill No. 115, imposes a penalty on owners of woodland who permit brush to accumulate on their property.

State Banks Prosperous.—The banks of the State have on deposit $550,057,022, an increase of $12,109,441. A great part of this increase is in banks in the rural districts.

Ravages of Horse Nettle.—Farmers in certain sections of the state have started a campaign to rid their fields and pastures of the troublesome weed known as horse nettle. It is a rank grower, resembling the potato in leaf character, and the stems bear long, straw-colored prickles. Farmers have found the best way to get rid of it is to cut down the stem close to the ground and throw salt freely around the stem and wherever the green leaves from the underground root make their appearance. This salting must be repeated at intervals.—D. T. Hendrickson.

NEW YORK LETTER

City Labor For Farms.—A plan has been suggested by Gov. Glynn and commissioner Huson, whereby idle laborers in New York City are to be transported at the expense of the state to central New York to work as farm laborers. Payment of transportation has been objected to by farmers procuring help thru the labor bureau of the department of agriculture, hence the state will deliver them to farm districts.

Those City Farmers.—The first installment of laborers from New York City was brought up state last week. There were 75 in the carload and about half the number found employment the same day. Some of these laborers knowing nothing about farming, wanted higher wages than farmers had been accustomed to pay local hired men which barred their getting employment promptly. The first venture was on the whole a success. Other importations will arrive in a few days at other points where this kind of labor can be used.

Arkport Exchange.—A Produce Exchange has been organized at Arkport and incorporated under the new cooperative act of the legislature. It will deal principally with supplies for the farms tho some arrangement is expected to be made with the Long Island Potato Growers' Association whereby potatoes can be sold.

A New Idea.—A new thought in cooperation in this state is the plan adopted by a creamery association recently organized at Hurleysville, which proposes to divide its surplus profits into three parts as follows: 50 percent to go to the farmers who supply the creamery with milk, 25 percent to the consumers and 25 percent into the reserve fund of the association. It is proposed to organize the consumers who patronize the creamery so that the product of the factory may be delivered direct to them by representatives of the company.

Highway Matters.—There will be no more highway legislation at this session, nor any changes made in the personnel of the department. Any further investigating of the department will be done by the Assembly committee, other probes seemingly having been dropped.

Day Of Rest Bill.—The senate has passed the bill exempting employees of creameries, cheese factories, milk stations and ice cream plants from the provisions of the law requiring them to observe one day of rest in the seven.

Briefs.—Gen. W. T. Russell has been appointed by Gov. Glynn as advisory engineer in the highway department. All temperance legislation has been killed for this year. Gov. Glynn sent a special message to the legislature proposing the establishment of auction markets in cities. A bill has passed both Houses providing for the employment of state prison convicts on the state highways. It is likely to become a law. The farm credits bill seems to have been laid aside for this year.

Health Statistics.—The last session of the state grange was much stirred by the Public Health committee's report to the effect that the rural death rate is larger than that of the cities. The subject has been discussed considerably and one Pomona grange has passed resolutions against reckoning the deaths in state institutions located in the country, protested against including cities or towns of several thousand population, in the rural districts. The facts are, however, that all deaths are credited to the locality in which they occur and therefore those persons who have gone from the country to city hospitals and have died there more than counterbalance the deaths of persons in state hospitals and other state institutions that are located in the country.—D.

MARYLAND NOTES

Cannery Prices.—In Caroline county the local canners will pay $9 per ton for tomatoes the coming season, or 15 cents per five-eighth basket. It is thought these prices will very likely rule thruout the state. Farmers in Kent county are holding out for 16 cents a basket. Complaints are heard that the canners have agreed not to pay over a certain price, and farmers are threatening to cut out tomatoes and plant other crops. The Talbot Packing and Preserving Company has opened an office at Cordova to make contracts with farmers to grow peas, corn and tomatoes for their cannery. They are offering for peas, $50 per ton; $9 for corn and $8 for tomatoes.

Produce Exchange Organized.—Talbot county farmers have organized a Produce Exchange. Electors are to manage the exchange this year. Capital stock is to be $10,000 and 2,000 shares at $5 per share will be issued. One man cannot hold over 50 shares, and owners of shares are prohibited from selling any shares before offering them to the exchange. This is to prevent cornering of shares by one or more stock holders. In a few minutes $3,000 worth of stock was subscribed for.

The Anne Arundel Produce Exchange.—This is another new organization which was born last week at Glen Burnie in that County. Altho gotten up on short notice 54 persons subscribed to the stock of the new organization.

Club Banquet. — The White Hall Farmers Club and Improvement Association held its annual banquet March 12.—G. O. B.

NEW JERSEY GAME LAW

The New Jersey Farm News letter in a recent issue of Pennsylvania Farmer contained the following: "Two bills which deserve defeat are those repealing the gunners' license act of 1909, and one making it unnecessary for a resident to have a license to hunt in his own county." I was indeed surprised to read this in a farm paper with a New Jersey circulation. The last of these two bills, House bill No. 392, was introduced by me for the benefit of the farmer and laboring man. Being a farmer myself I am interested in all legislation that affects the farmer and if this is a bad bill for the farmer I certainly want to know all about it. I would be pleased to have your correspondent state thru Pennsylvania Farmer the bad features of a bill that, if enacted, would allow farmers to hunt and enjoy a day of sport with their neighbors or friends for the game which they harbor the entire year, often to the detriment of their crops, without taking out a license; and that will also bring a revenue to the Game and Fish Commissioner by making it necessary to have a license to hunt outside of the county of which a person is a resident and tax payer.—Oliver J. West, Gloucester Co., N. J.

The gunners' license act should not be repealed. The moneys received therefrom have gone a long ways towards stocking the state with game, and preventing irresponsible hunters from running across our fields, mowing down berry canes, young trees and grape vines, as well as an occasional "barnyard pheasant." General opinion opposes repealing such a good law. Now as to House Bill No. 392. As very few farmers go gunning beyond their own county, that bill would virtually repeal the 1909 act, and is so considered. It would have a tendency to turn loose upon our premises a horde of hunters from the villages and towns, who never have the price of a license, but are always able to borrow some sort of a gun. The farmers of New Jersey, and I know the rank and file of them, wish the license fee were $100 instead of $1. They want no let-down in the law of 1909.—D. T. Hendrickson, Monmouth Co., N. J.

VALUABLE FREE CATALOGS

Your Bargain Book.—The new 1914 catalog of The Charles William Stores, called "Your Bargain Book" should be in every farm home. It is a complete mail-order catalog of 1110 pages listing goods for every department of the farm and home. The Charles William Stores carry the endorsement of some of the strongest banking institutions in New York City, and all goods are sold under the following guarantee: That all merchandise shown in the catalogs is exactly as illustrated and described; full and complete satisfaction when you purchase; articles sold represent full value and will give all the service and satisfaction you have a right to expect. If any article purchased is unsatisfactory it may be returned at the expense of the company and exchanged for something else or money refunded and transportation charges paid. The catalog is free upon request to our readers. Address The Charles William Stores, 1015 Stores Bldg., New York City.

Future of Potatoes.—The future of potato growing in this country presents some real problems. The crop last year was short nearly 100,000,000 bushels. The tariff has been removed from foreign potatoes. The quarantine is to be lifted on potatoes from additional countries. The last two conditions will tend to lower prices somewhat, but we have demonstrated that we can compete successfully with foreign countries in potato growing. The average American price for the past three years has been about 64 cents per bushel. There is a profit in potatoes at 50 cents, but the profit will depend upon cost of production. Sure profits demand best labor-saving machinery, and best potato machinery means the Bateman line, including planters, cultivators, sprayers and diggers. A postal card request for catalogs and circulars addressed to The Bateman Mfg. Co., Box 243 Grenloch, N. J., will bring you full information.

COUNTY NOTES

Steuben Co., N. Y., (S.E.) March 16.—There has been more snow this winter than in a good many years. There is now about 20 inches—perhaps more; and there have been many days when the temperature has not been much above zero; several times it has fallen to 17 degrees and more below zero. Farmers have hauled logs to mills to be sawed into lumber; some for home uses and some for market. Doing chores and getting up wood is now the principal work of the farmer.—F. H. Dow.

Chautauqua Co., N. Y., (S.W.) March 16.—Weather fine and spring-like. Stock in good condition. Cows from $60 to $100 or more; good horses, $200 to $300 each. Pigs rather scarce at $4.00 each. Pork selling at 10 to 10½c lb, dressed; butter, 28c; eggs, 26c. Work well along and help is more plentiful than for a few years back at $25 to $30 per month and board.—J. L. Barber.

Montgomery Co., N. Y., (S.E.) Mar. 16.— Very cold and stormy. Much snow. Butter, 30c; eggs, 28c; dressed veal, 14c; fowls, 18c. Roads in bad condition. Snow money appropriated all used in most towns. Pomona Grange met at Fonda March 18. Farm Bureau makes contract with Allen S. Merchant, an expert, to be County Agent.—John L. England.

Clinton Co., N. Y. (N.E.) March 16. —Weather fine and cold. No sugar made yet. All cattle in good demand and prices high on beef cattle and milk cows. Milk a little lower than at this time last year; $1.55 per cwt at shipping stations. Most farmers have enough coarse feed to winter their stock. The ground heavily covered with snow.—Henry S. Gilbert.

Ocean Co., N. J., (C.) March 14.—Weather fair; warm for several days. Very little live stock changed hands last 2 months. Good fresh cow $75 to $90; good horses $250; poorer grades $125@$150; plugs any price. Hogs are more plentiful than last year; more breeders. Work at a standstill on account of snow. Prospects are grain and grass will be smothered with the coating of ice.—C. M. Rorer.

Lycoming Co., Pa., (N.C.) March 16. —Windy March weather, melting snow quite rapidly. Sleighing gone; roads in bad condition owing to ditches being full of drifted snow and water running in road. Wheat and rye look bad where snow is off but too early to tell whether it is damaged or not. Some manure being hauled but no promise of any real farm work being done this month. A good many farm sales. Stock of all kinds selling high. Farm implements and equipment going slow and mostly under price. Lots of moving. Some farms changing owners. A good many farms for sale. Farm labor scarce and high.—Clyde E. Hall.

CONFERENCE ON MARKETING AND FARM CREDITS

The Second National Conference on Marketing and Farm Credits will be held at Chicago, Ill., April 14 to 16, 1914, with headquarters at the Sherman House. A program national in scope and purpose has been arranged. The conference will consider the problem of marketing from the standpoints of producer and consumer.

Jersey Cattle Club Fees.—The report of the Committee on Fees and Revenue of the American Jersey Cattle Club is now ready for distribution. The report is of interest to every Jersey breeder. It is mailed from the office of the Club at 324 West 23 St., New York City.

POULTRY.

PEN-Y-BRYN FARM
AMBLER, BOX P 36, PA.
Breeders of S. C. W. Leghorns, White Wyandottes, Imperial Pekin and White Indian Runner Ducks. Eggs, Chicks, Ducklings, and White Leghorn Pullets for sale.

GRANDVIEW FARM
Single Comb W. Leghorns
Best laying strain, vigorous stock. Eggs for hatching, $1.00 per 15; $3.00 per 50; $5.00 per 100. If 50 percent hatch is not secured they will be REPLACED AT HALF PRICE. Let us book your orders early. J. M. & C. C. McCURDY, Hartstown, Penna.

EGGS FOR HATCHING
From Kulpe famous 242 egg strains. S. C White Leghorns, S. C. Rhode Island Reds, free range breeders, $1.50 per 15, $6.00 per hundred, day old chicks, $12.00 per hundred. Good Cockerels, $2.00 each. Limited number of Improved Silver Campine eggs $3.00 per 15. H. A Bacon, Hillcrest Poultry Farm, Berwyn, Md.

CHESTERBROOK FARM.
S. C. White Leghorns—Baby Chicks, $10 per 100. Hatching Eggs, $7 per 100. Imperial Pekin Ducklings—Baby Ducklings, $15 per 100. Hatching Eggs, $10 per 100. Write for circulars. Satisfaction guaranteed. We are now booking orders.
Chesterbrook Farm, Berwyn, Pa.

SINGLE COMB WHITE LEGHORNS,
Farmstead utility strain. Pullets lay at 4 1-2 months old. Breeding stock, hatching eggs, and day old chicks, Cockerels March hatched. Imperial Pekin Ducks, Afton Farm strain. Breeders and hatching eggs. Write for details to CAPE MAY FARMSTEAD, Cape May, N. J. Geo. C. Rea, Supt.

S. C. White Leghorn Chicks and Eggs
in any quantity. Chicks 12c each. Eggs 5c each. Large, vigorous farm raised stock. True Leghorn type. Hot water Mammoth incubators used. Is seven years experience worthy of consideration?
Vancrest Poultry Farm, Salt Point, N. Y.

WHITE LEGHORN CHICKS. PURE BLOODed from free range stock, the kind that lay winter eggs. Hatches every week. April 12c each; May 10c; June 8c.
ARTHUR MORRIS, Box 53, Ischua, Rt. 1, N. Y.

First and Special Again, Madison Square Garden. World's greatest winning Indian Runner Ducks, Barred Rocks, White Leghorns. Folder "Hatching and Care of Ducklings." Setting $1. up. GAEBEL BROS., Box G-62, Morristown, N. J.

Leghorns; White and Brown 15 Eggs postpaid, $1.15; 100 eggs, $4.50; 100 Chicks, $12.50.
GLICK'S POULTRY FARMS, SMOKETOWN, PA. Box 63.

Single Comb White Leghorns
Hatching Eggs, $5.00 per 100. Day-old chicks: April, $12.00 per 100. May, $10.00 per 100. Delivery Guaranteed. GEO. FROST, Levanna, Cayuga Co., N. Y.

Wild & Bronze Turkey Eggs —Chicken Eggs Handsome catalog 2c stamp, showing pure wild gobbler from the mountain. Valley View Poultry Farm, Belleville, Pa

60 page catalog free. 60 varieties, chickens, ducks, geese, turkeys, guineas and Bel. Hares. Stock and eggs, low prices. H. A. Souder. Bx. P. Sellersville, Pa.

Runner Ducks, Fawne and Pure Whites, silver cup winners. Bargains. Also White China Ganders ·Nelson Bros., Grove City, Pa.

60 Page Book Free During Next 30 Days. Includes our Store of Poultry, Dogs, Ferrets Hares and Pigeons. J. A. BERGEY, Telford, Penna

Giant Bronze Turkey Eggs, $4.00 per 10. R. C. Red Eggs, $1.00 per 15. Fawn or pure white I. R. Duck eggs $1 per 12. H. J. VanDyke, Gettysburg, Pa

MONEY MAKERS. Colored Muscovy, Pekin, Mallard ducks, geese, W. turkeys, guineas, Rocks, Wyandottes, Leghorns. Catal B. F. Kahler, Hughesville, Pa.

64 Varieties Poultry, Hares, Stock and Eggs for hatching at reasonable prices. Valuable Illus. Desc. Catalogue free. H. D ROTH, Box 2 Souderton, Pa.

Indian Runners—Fawn and White. Prize winners. White egg strain. Eggs $1.25 and $2.00 per 13. Catalog free Geo. F. Williamson, Box 145, Flanders, N. J.

White Indian Runner Ducks, Fishel's strain, and Blue Andalusians. Stock and eggs at all times J. S. WILE, Souderton, R. 2, Pa.

BLACK LEGHORNS—Baby Chicks, Hatching Eggs —the kind that lay. A. E Hampton, Pittstown, N. J.

Dollars For You 14 varieties, land and water fowls. 200 egg strain. Send 2c stamp for catalog. Maple Cove Farm, Rt. 24, Athens, Pa.

White Langshans Eggs, $1.00 per 15; $5.00 per 100. White Indian Runner Duck Eggs, $3.00 per 12. R. H. Moore, Nellie, Ohio

Eggs from pure bred Rocks, Wyandottes, Orpingtons, Reds, Brah., Leg., Min., Anconas, Hamburgs, etc. Low prices. Cata. free. H. Mohr, R. 3, Quakertown, Pa.

Indian Runner Ducks, best strains; standard, fawn and white, Pure white eggs, $2.00 a dozen. F. E. PUFF, Rockdale Farm, R-7, Butler, Pa.

$5 Buys a trio S. C. Buff Leghorns, nice ones. (Tecumseh Strain.) Cockerels, $1.50 each. G. S. HALL ·Farmdale, Ohio

UTILITY AMERICAN DOMINIQUES
Money makers. HERBERT D. ROOKS, Mills, Pa.

THOROUGHBRED High Grade White Plymouth Rocks. Eggs, 15 for $1.50; 30 for $2.50. FRANK H. STEVENOT, R. F. D. 5, Mt. Sinai, N. Y.

White Leghorn EGGS FOR INCUBATION MATHEWS PURE STRAIN $6.00 per hundred crated; $1.00 per doz. Parcel Post. Cash with order.
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WHITE HOLLAND TURKEYS, pure bred, large, vigorous, white Wyandottes and Pekin Duck eggs for hatching. H. W. Anderson, Stewartstown, Pa.

20 Varieties Cochins, Wyandottes, Leghorns, Plymouth Rocks, Hares and Bantams. Stock and eggs for sale. J. M. NYCE Elroy, Pa.

Barred Rocks I have a combination of some of the best strains. Pullet line only. Eggs $1 per 15, $5 per 100. Send for mating list. CHAS. T. DOWNING, R. D. 2, West Chester, Pa.

FAWN & WHITE Indian Runner duck Eggs and Single Comb White Leghorn Eggs, 20 Eggs for $1.30 Parcel Post. Bay View Poultry Farms, Shelltown, Md

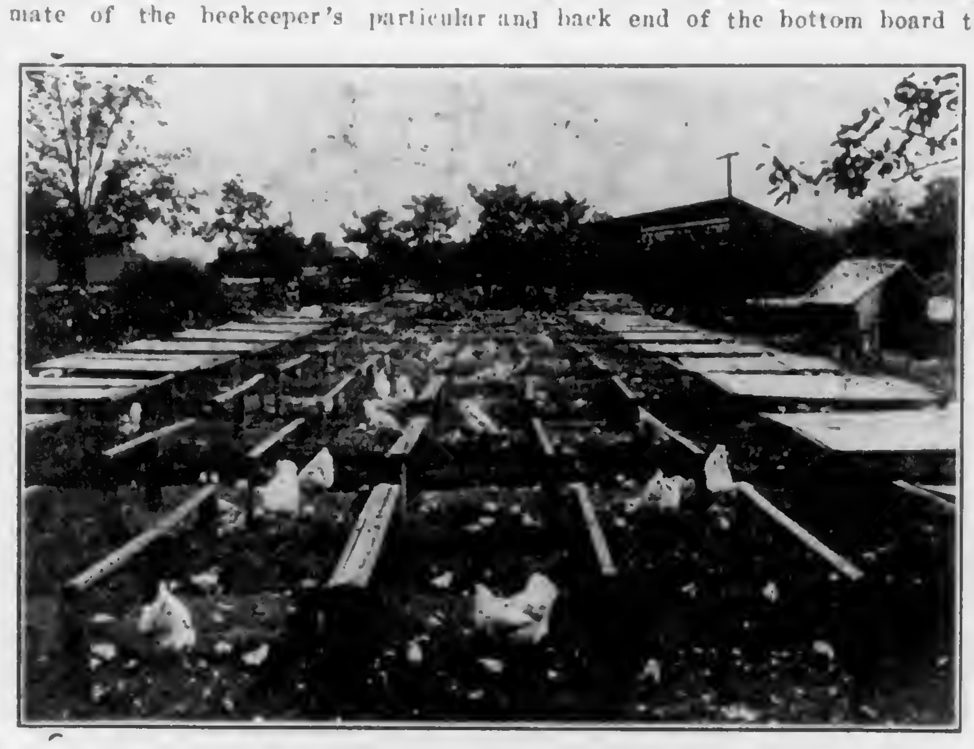
20 EGGS $1.00. Leading Varieties. Prize Poultry, Pigeons, Hares, etc. Booklet free. Illustrated Catalogue 10c. F G. WILE, Box 18, Telford, Pa.

Poultry

THE HIVE TO SELECT AND HOW TO MAKE IT

The safest and best rule in making or selecting hives and implements for the apiary is to have them simple and accurate in construction. A plain box with frames and as few other loose parts as possible will yield in the hands of a skilful beemaster far better results than the most elaborately constructed bee palace manipulated by one who does not understand the nature and requirements of bees; in fact, the most experienced generally prefer the former. The important point to decide in connection with any proposed modification or adjunct of the hive is whether its adoption will more than compensate for the resultant loss of simplicity.

In regard to the particular style or form of hive to be used to insure the best results, it should be stated that while an intelligent apiarist whose experience has been considerable may be successful with almost any hive, even with poor ones, there can be no doubt that a hive not only adapted to the nature of the bees but also to the climate of the beekeeper's particular locality, and at the same time perimtting the rapid performance of all operations necessary in securing surplus honey, will very materially affect the net profit of an apiary.



INDIVIDUAL PENS FOR YOUNG BROODS.
Niagara Poultry Farm, Niagara Co., N. Y.

It cannot be insisted too strongly that the only profitable way to keep bees is in hives with movable frames. The bees build their combs in these frames, which can then be manipulated by the bee-keeper as necessary.

The first hives should be bought from a regular manufacturer of bee supplies, and for a beginner it might be advisable to have one of them made up at the factory, so he can see just exactly how the pieces should go together. After he learns how to handle the hives and frames, and realizes the importance of absolute accuracy and uniformity he may make the hives himself, if he is a fairly good handy man with a saw and plane. The Langstroth hive is generally recognized as the standard and is a safe hive for any beginner to adopt. There is no patent on this hive or any of its parts, so that any one is at liberty to make it if he wants to do so. Bees in this style of hive will sell from 10 to 20 percent higher than in any other size hives. The hive body is made of lumber ⅞ inch, 20 inches long, 9½ inches deep, and 13⅞ inches wide, outside measure. Eight frames and a division board are used in the brood chamber. The section case is the same size as the body and takes twenty-four 4¼ by 4¼ by 1⅞ inches slotted sections, in section holders.

Many bee-keepers are good mechanics, and located near planing mills that do good, accurate work. Such men can save money by making their own hives, frames, supers, etc. Whatever hive is chosen, there are certain important points which should be insisted on. The material should be of the best; the parts must be accurately made, so that all frames or hives in the apiary are interchangeable. All hives should be of the same style and size; they should be as simple as it is possible to make them, to facilitate operation. Simple frames diminish the amount of manipulation. The frame and hive most in use in this country is the invention of Langstroth, and this hive with slight modifications, has been generally adopted. The bars composing frames are usually made ⅞ inch wide, altho some prefer to have the top bar 1 inch or even 1⅛ inches wide, and the bottom bar is made as narrow as ⅜ inch or even ⅜ inch square. The narrower bottom bar, at least down to a width of ⅜ inch, renders the removal of the frames less difficult.

The bottom board is simply a plain board with cleats at the end to prevent warping. Strips of wood, ½ inch by ⅞ inch are nailed around the sides and back end of the bottom board to support the hives above it. In place of nailing on a strip at the back end, this portion of the bottom board may be formed by allowing the cleat at the back end to project ½ inch above the surface of the bottom board. I also think favorabley of what has been called the reversible bottom board, that is, a bottom board made exactly as I have described with the addition of ⅞ inch strips on the under side. With such an arrangement the bottom board can be turned over in hot weather and this gives an entrance of ⅞ inch in height, instead of ½ inch. It adds very little to the cost, and is certainly a benefit in hot weather. Many persons place the bottom boards directly on the ground, and the majority have them but 3 or 4 inches above the surface. By arranging them farther from the ground, at least 6 to 8 inches, dampness is avoided and the ease in manipulation is greatly increased. A good, tight roof or cover is indispensable, and should be well painted, so that no drop of water can get in from above. A flat roof slanting from front to rear will answer, but a ventilation gable roof with the sides well slanted is far preferable. Great accuracy of parts must be insisted upon in hives and frames, because covers and top stories should be made to fit interchangeably, and also because the bees carry out their own work with great precision, so that ease in manipulation of combs can be secured only by nice adjustment. Hives should be painted to protect them from the weather. It is usually desirable to use white paint to prevent excessive heat in the colony during hot weather. —F. G. Herman, Bergen Co., N. J.

PROFITS IN POULTRY WORK

In our experience as adviser along all lines of poultry work we find that farmers are specializing on white eggs for the better markets. We have been engaged among poultrymen and farmers in 16 counties of the state and find many paying flocks of chickens numbering from 200 to 6,000 birds and in most places these birds are white leghorns for egg production. We find that these people are breeding, feeding and housing their flocks with one object in view, viz: eggs of good size, white in color and in many cases infertile or sterile for the New York market, for which eggs they command from 5 to 10 cents above market prices.

We are often asked by breeders and farmers how this advance above market prices can be obtained and when they are informed that by keeping the nesting material clean and doing away with the male birds in the flock so that the eggs can be guaranteed to be of the best quality, clean and not spoiled, it is easy. The trouble with most of those who are keeping hens is that they do not pay strict enough attention to the flock as regards cleanliness, suitable quarters and proper food.

Many persons start in on too large a scale without any experience and fail, while others starting with a few hens or chicks are successful simply because they grow with the business. We visited the farm of J. H. Frank in Lancaster County.

Several years ago Mrs. Frank had a mixed flock of chickens which she believed made money for her. She, however, purchased 50 white Leghorn baby chicks as a foundation for a paying flock from which to produce eggs for a good market. During the period from October 1, 1912, to October 1, 1913, from a flock of 450 hens and pullets including 12 male birds, this woman can show a profit of $858 and she will have a flock of 600 fowls to start business for another year; all of which is only an instance of what can be done on any farm by enterprising methods. The eggs from this farm are marketed in New York City and at the time of my first visit Mrs. Frank was receiving 60 cents per dozen for strictly fresh eggs.

We find many farmers trying to specialize on poultry but are sorry to be obliged to think that some of them are doing this part of their work as they have done the general farming for years, along lines that do not point to success. Too many of them do not study the habits and requirements of their flock, neglect the smaller details that go toward promoting the health of the flock, and thus fail. A good up-to-date poultry or farm paper would in many cases help people who have not the experience along these lines.—Frank Kline, Chester Co., Pa.

NOTE.—Mr. Kline, who may be addressed care of the Department of Agriculture, Harrisburg, Pa., or Spring City, Pa., will answer all queries along poultry lines or make a personal call in any part of the State, in his capacity as State Adviser in poultry work.—The Editors.

SOME POULTRY PESTS

Biting Lice.—Several species of these wingless insects often infest chickens and if numerous are indirectly responsible for diarrhea and general debility. These lice do no suck blood but feed on skin scales, blood clots, fine parts of the feathers and refuse on the bird's body. They are supplied with sharp claws, which continually scratch and irritate the chicken. The eggs are laid on the feathers and in warm weather hatch in about ten days. A few weeks later the lice are mature.

Treatment should include both fowls and houses, inasmuch as the lice can also be found on the perches and in the litter. The house should be sprayed with a ten percent kerosene emulsion or with benzine and afterward whitewashed thoroly.

The chickens can be dusted with pyrethrum or fine tobacco dust. Barn yard fowls will keep themselves fairly free if supplied with plenty of road dust, the finer the better. A dust box should always be available and large enough so that the dust will not be spilled. Prof. H. R. Lewis, of the New Jersey Station, recommends a lice powder made with 3 parts of gasoline, 1 part of crude 90 percent carbolic acid and enough plaster of Paris to absorb all of the moisture, about 4 quarts of plaster being necessary for 1 quart of the liquid. He also mentions the fact that crude petroleum is effective against lice, being sprayed by means of a simple air gun sprayer on the fowl, while it is suspended by one foot in a looped cord.

Mites.—Chicken mites are eight-legged creatures, grayish in color except when filled with blood, when they are red. Mites are not insects, but belong to the same group as spiders and differ from biting lice in that they suck the blood of the chickens, feeding usually during the night and hiding by day in cracks and crevices of the house.

The eggs are laid where dirt has accumulated or in the droppings, the young mites feeding at first on such material. Remedies must necessarily be applied to the house. First, clear the house of birds and then spray thoroly with either 10 percent kerosene emulsion, benzine, kerosene or hot water, reaching all cracks and crevices and drenching the roosts. The entire interior should then be whitewashed and it is a good plan to add 4 ounces of carbolic acid to each gallon of whitewash to increase its effectiveness. Repeated applications may be necessary but the mites are bound to be kept in check. The ends of the roosts where they come into contact with the supports should be smeared with coal tar, which will prevent the mites reaching the birds.

Another mite related to the chicken mite and known as the itch mite attacks the legs, combs and neck, burrowing under the skin and causing a crust to form. In this case it is necessary to wash the infested parts with warm soap and water and afterward apply an ointment containing sulphur.

Still another species lives in a white powdery substance at the bases of the quills. Sometimes the feathers break off or are pulled out by the chickens. The same treatment as for the itch mite applies here. Chickens hatched in an incubator should be free from lice and mites and remain so until brought near lousy birds or placed in infested houses.—Harry B. Weiss, New Jersey Experiment Station.

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Yes, most of them can be saved—saved by starting them on

Dr. Hess Poultry PAN-A-CE-A

Right from the very first feed. During my 25 years' experience as a doctor of medicine, a veterinary scientist and a successful poultry raiser, I discovered that, by using a certain nerve tonic and appetizer, *leg weakness could be absolutely overcome;* that the use of another certain chemical that is readily taken up by the blood would cure gapes, by causing the worms in the windpipe (the cause of gapes) to let go their hold and helping the chick throw them off. By combining these same ingredients with bitter tonics and laxatives, I found that I could control and invigorate the chick's digestion.
My Poultry Pan-a-ce-a helps put stamina into the chick, strengthens and cleanses its system and sends it along the road to maturity, hardy and robust. Most of the biggest poultry farms in the United States, where chicks are hatched out by the thousand every day during hatching season, feed my Pan-a-ce-a regularly.
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You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it does not help your chicks grow, keep them well, make your poultry healthy and your hens lay, he is authorized to refund your money; you can't possibly lose—Pan-a-ce-a must pay or you get your money back. Costs a penny a day to feed 30 fowl. 1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail $2.50. Except in Canada and the far West. Buy of your dealer—Pan-a-ce-a is never sold by peddlers.

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Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or if kept in the dust bath the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West. I guarantee it.

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Household

HOMEMAKERS' CONFERENCE AT CORNELL.

The recent Homemakers' Conference for farm women at New York College of Agriculture, Ithaca, N. Y., was a tremendous success. About 2,500 people attended Farmers' Week, and of this number more than 300 were women who came for the Homemakers' Conference, consisting of some 50 lectures or demonstrations given thruout the week by 26 instructors, either of Cornell or in similar institutions. The Conference resembled a school, continuous instruction being given along various lines. At 9 o'clock each morning there was a lecture and demonstration upon cooking. This began with a demonstration on egg cookery. The importance of fresh or well-kept eggs was emphasized, ways of detecting fresh and stale eggs in water and brine were demonstrated, and the method of preserving eggs in water glass was explained. Then followed a discussion and demonstration of the effect of heat on eggs, the advantage of low temperature in cooking being emphasized. Egg as a leavening agent was illustrated by a foamy omelet and by sponge cake.

At another lecture meat cuts were shown and discussed, the demonstration consisting in showing a side of beef divided into the ordinary retail cuts. The relative food value of the various cuts was considered; also the relative prices, and the fact was emphasized that market prices are no indication of the relative food value of meat. The principles underlying the cooking of tough and tender cuts of meat were illustrated. Two lectures dealt with bread making, each ingredient being first studied separately, then their effect when put together. Temperature, mixing, kneading and baking, were discussed and illustrated. Pastry and cake were discussed in a similar manner.

At 9 o'clock each day the sewing department lectures were given, and included textiles, sewing for school children, patterns and their application. The discussion of textiles noted the importance of women as factors in textile industries, and pointed out how the removal of most manufacturing industries from the home has destroyed women's ability to judge materials. To the end that every woman may be trained to buy textiles more intelligently, simple tests of materials often adulterated were taught, such as tests of damask or dress goods with light oil; for adulteration of wool by testing for cotton with a weak solution of hot caustic soda or the flame test; for detecting metallic salts weighting or filling of silks. An outline of sewing work was given for use in rural schools or with children in the home. ''Patterns and their application'' included the principles of altering commercial patterns to individual measurements, and the use of foundation patterns in the making of all of our gowns. ''Some problems of the home dressmaker'' covered a discussion of dress forms, pressing, shrinking, setting colors in fabrics, homemade trimmings, and individual problems.

From 11 until 1 o'clock each day an extension school was carried on in one of the cooking laboratories, similar to the one-week schools being given in various rural centers thruout the state. The program consisted of lectures and demonstrations upon cereals and rice, the cooking of meats, milk and vegetables and the making of salads. Emphasis was laid upon the scientific principles underlying all cookery.

The lectures given by the Department of Household Art, included ''A study of farm houses,'' by Prof. Helen Binkerd Young, who believes that there is need of a new type of architecture for farm houses. The farm house is much more difficult to plan than the city home, because it is the center of activities for all the operations that must be carried on upon the farm. We must find room for the laundry, the wash room, storage and an office, as well as for the usual working, living and sleeping space. The problem in the great majority of farm houses is how to make over inconvenient, poorly arranged structures into houses, each room of which shall serve its purpose well, and the whole be convenient and attractive.

In ''Color in the home and school,'' Prof. Annette Warner showed that color reacts upon the individual. Nature uses bright colors only in touches or during short seasons of the year, and we would do well to copy nature by using bright reds, yellows or blues only in small amounts. Grayed colors serve best as backgrounds, with merely touches of the brilliant hues. In ''Taste in Dress'' emphasis was laid upon the fact that it is possible for every woman to be in style and yet not wear gowns that are unbecoming, because extreme. Every fashion permits of modifications which may be adapted to the individual.

At 10 o'clock each morning Prof. Flora Rose lectured on nutrition. She urged the need of more fruits, cereals and vegetables, and less meat in the average dietary. She stated that all foods serve one of three purposes: They are body builders, body regulators, or energy yielders. The average dietary lacks body-regulating food, with the result that a great many people are suffering from constipation and other digestive troubles. She showed how we can reduce the cost of food by substituting less expensive vegetables, cheaper cuts of meat, the less expensive fruits, and more cereal products. She emphasized that for children milk, eggs, cereals and fruits should be included in the dietary with meat after the fifth year; that butter fat is necessary to stimulate growth, hence it is not advisable to substitute other fats in the dietary of the child. As ''the human harvest'' depends upon heredity and environment, the health of parents as well as knowledge of food needs of the child should be considered. The function of various food stuffs and the effect of methods of cooking upon appetite and digestion were clearly shown in Prof. Rose's own logical way.

Prof. Martha Van Rennselaer, Supervisor of Cornell Reading-Course for the Farm Home, and head of the Home Economics Department, caused every housekeeper to think about her share in the present cost of living. Forceful ficient housekeepers. It also offers many Rennselaer never fails to hold an audience, whatever may be her subject. Speaking on ''Education in Home Economics,'' she said that every effective course trains girls, first of all, to be ef-convincing, conversational, Miss Van opportunities in municipal work, for which women are peculiarly fitted. The scope of home economics is exceedingly broad, and is concerned with all phases of human welfare.

Edith C. Fleming, financial secretary of the Department of Home Economics, outlined a simple method of keeping household accounts, and urged the need of general instruction along that line in rural and urban schools.

D. J. Crosby, of the U. S. Department of Agriculture, talked on ''Sanitary Plumbing''. Helen Knowlton, instructor in the Department of Economics, gave a series of talks on ''Fresh air'' and ''Clean water.'' Lectures were given upon ''First aid to the injured'' and ''Fighting incipient fires.'' Lectures by Mrs. Carrie Chapman Catt and Dr. Anna Howard Shaw of the National Woman Suffrage Association created a great deal of interest and enthusiasm. The new Auditorium, seating 2,500 people, was practically filled.

The Home Economics cafeteria, under the management of Miss Anna Hunn, a young graduate of the Department, deserves special commendation for its share in the hospitality of Farmers' Week. With a force of 35 helpers, Miss Hunn served approximately 2,000 people each day. As a whole this conference was the ''best yet.''—Claribel Nye.

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IF YOU USE A ''NO-BURN KETTLE BOTTOM.'' Made of tinned steel wire. Fits any ordinary sized kettle. Permits the full circulation of heat, and yet prevents vegetables from settling through to the bottom. Insures you against any more burnt dinners. Two sizes, 7 or 8 inches. Either size sent prepaid for 25c. Send for my new catalogue of household necessities. Free.

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SHOP NOTES

''Galore'' is just the word to describe the beads one sees everywhere this season. Every shop has counters full of them dangling alluringly before the eyes of the shoppers. One sees them on the necks of old and young, and also around the waists for girdles and on hats for trimming. There are beads at all prices from 10 cent glass ones to hundreds and thousands of dollars for pearls and precious stones. And there are quantities of wooden beads dyed in all shades of brown, yellow, red, blue and green. Many of these are as pigeon or bantam eggs, and altho the strands are long enough to reach from the neck to the waist, fashion is not satisfied with this so the strands are doubled. Then they are lengthened with danglers of odd shapes, ending with silk tassels. These range in price from twenty-five cents for the small ones to one dollar and a half for the long ones.

For twenty-five cents one may get a pretty string of glass beads to match almost any gown no matter what the shade may be. And with the frilly white neck fixings that are still so popular these are very pretty and becoming. For those who do not care for beads there are many styles of necklets made of chains of gun metal, silver, or compositions of different kinds. These are ornamented with imitation pearls, amethysts, topaz, emerald, opal or other precious stones, and have odd and pretty pendents to match the ornamentation. They are priced at 50 cents to $2, according to quality and workmanship.

Tango ties are the novelties offered for those who do not fancy the long strands of great tango beads. These ties are made of satin piping half an inch wide, fastened at the ends with a pendant made of oddly shaped and brilliantly colored beads. These ties sell for 50 cents each in most of the stores and are attractive when worn with filmy lace or lingerie waists or with the black chiffon waists.

The New Handkerchiefs.—Brilliant color is the note that predominates in all the new spring fashions. Everything has a touch of brightness about it, hats, gowns, waists, skirts, coats and wraps, so it is not surprising that handkerchiefs for both men and women come in colors or with colored borders. There are colored handkerchiefs with designs embroidered in white and white handkerchiefs with colored embroidery, and there is the same combination in bars and stripes. Some sheer white handkerchiefs with broad hems have tiny edges of lavender, blue, pink or green lace. These new spring handkerchiefs may be bought at 25 to 50 cents each, according to quality.—Nevada Davis Hitchcock.

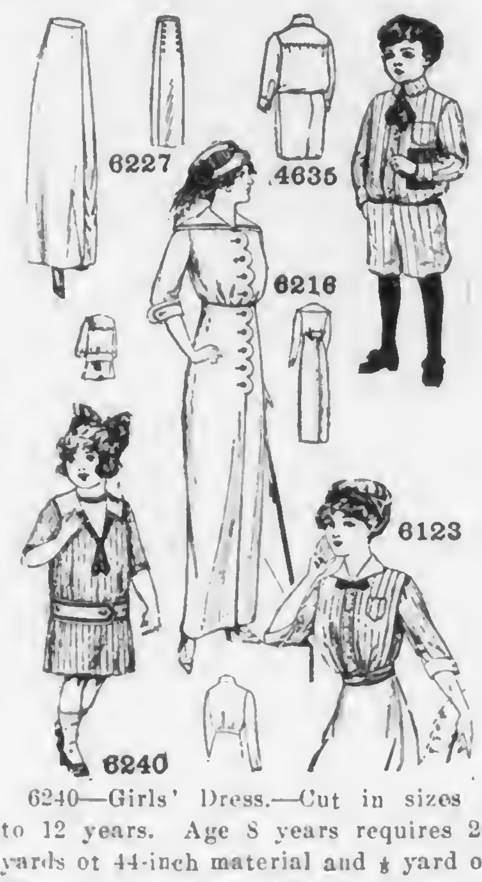
PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.

6227—Ladies' Three Gored Skirt.—Cut in sizes 22 to 30 inches waist measure. Size 24 requires 2¾ yards of 54-inch material. Price of pattern 10 cents.

6216—Ladies' Dress.—Cut in sizes 34 to 42 inches, bust measure. Size 36 requires 3¼ yards of 54-inch material and 3⅜ yards of braid. Price, 10 cents.

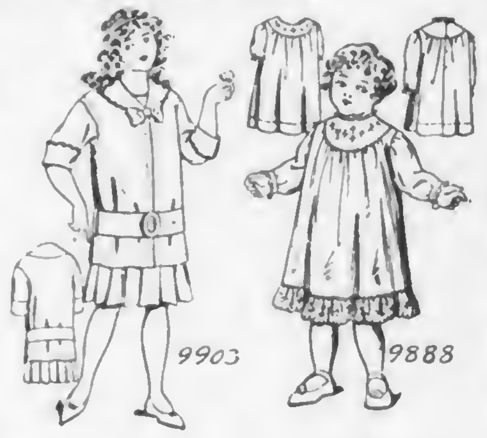
4635—Boys' Shirt Waist Suit.—Cut in sizes 4 to 12 years. Age 8 years requires 2¾ yards of 36-inch material. Price, 10 cents.

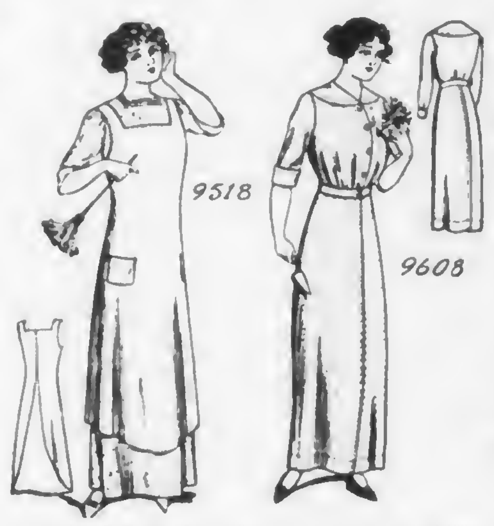


6240—Girls' Dress.—Cut in sizes 4 to 12 years. Age 8 years requires 2½ yards of 44-inch material and ⅝ yard of 27-inch contrasting material. Price, 10 cents.

6123—Ladies' Shirt Waist.—Cut in sizes 34 to 42 inches, bust measure. Size 36 requires 1⅞ yards of 44-inch material and ¾ yard of 27-inch contrasting goods. Price, 10 cents.

9903—Girls Dress.—Cut in 4 sizes: 8, 10, 12 and 14 years. It requires 3¾ yards of 40-inch material for an 8-year size. Price, 10 cents.





9888—Child's Dress.—Cut in 4 sizes: 1, 2, 3 and 4 years. It requires 2½ yards of 36-inch material for a 3-year size, with 2½ yards of 4-inch edging for ruffle. Price, 10 cents.

9518—Ladies' One-piece Apron.—Cut in 3 sizes: Small, medium and large. It requires 3¼ yards of 27-inch material for the medium size. Price, 10 cents.

9608—Ladies House Dress.—Cut in 6 sizes: 32, 34, 36, 38, 40 and 42 inches, bust measure. It requires 7 yards of 36-inch material for a 36-size. Price, 10 cents.

The Strawbridge & Clothier Spring and Summer Catalogue showing the best and newest styles in Women's and Children's Garments and Dress Accessories will be sent free on request. It will be of interest to every woman who shops by mail and wants thoroughly dependable merchandise, fairly priced. The following list shows what lines are covered in this Catalogue:

Women's Coats
Women's Skirts
Women's Suits
Women's Dresses
Waists
Millinery
Misses' and Children's Garments
Corsets
Petticoats
Infants' Goods
Boys' Clothing
Gloves
Neckwear
Leather Goods
Toilet Goods
Stationery and Engraving
Artneedlework
Cut Glass
Sweaters
Notions
Play Suits
Hosiery
Men's, Women's and Children's Knit Underwear
Men's and Boys' Shirts
Shoes
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Blankets, Sheets
Silverware
Jewelry
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Try it for removing sticky and unyielding substances.

Be Sure to Mention Pennsylvania Farmer When Writing to Our Advertisers.

Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXVI (Continued)

"I fancy you are wrong, and I wish my brother were here," she said. "We could not refuse Mr. Winston permission to call, but whatever passes between us will have more than its individual significance. Anything we tacitly promise, the others will agree to, and I feel the responsibilty of deciding for Silverdale."

Miss Barrington went out; but her niece, who understood her smile and that she had received a warning, sat still with a strained expression in her eyes. The prosperity of Silverdale had been dear to her, but she knew she must let something that was dearer still slip away from her, or, since they must come from her, trample on her pride as she made the first advances. It seemed a very long while before there was a knocking at the outer door, and she rose with a little quiver when light steps came up the stairway.

In the meanwhile two men stood beside the stove in the hall until an English maid returned to them.

"Colonel Barrington is away, but Miss Barrington and Miss Maud are at home," she said. "Will you go forward into the morning-room when you have taken off your furs?"

"Did you know Barrington was not here?" asked Winston, when the maid moved away.

Dane appeared embarrassed. "The fact is, I did."

"Then," said Winston dryly, "I am a little astonished you did not think fit to tell me."

Dane's face flushed, but he laid his hand on his comrade's arm. "No" he said, "I didn't. Now, listen to me for the last time, Winston. I've not been blind, you see, and, as I told you, your comrades have decided that they wish you to stay. Could you sink your confounded pride, and take what is offered you?"

Winston shook his grasp off, and there was weariness in his face. "You need not go thru it all again. I made my decision a long while ago."

"Well," said Dane, with a gesture of hopelessness, "I've done all I could and, since you are going on, I'll look at that trace clip while you tell Miss Barrington. I mean the younger one."

"The harness can wait," said Winston. "You are coming with me."

A little grim smile crept into Dane's eyes. "I am not. I wouldn't raise a finger to help you now," he said, and retreated hastily.

It was five minutes later when Winston walked quietly into Maud Barrington's presence, and sat down when the girl signed to him. He wondered if she guessed how his heart was beating.

"It is very good of you to receive me, but I felt I could not slip away without acknowledging the kindness you and Miss Barrington have shown me," he said. "I did not know Colonel Barrington was away."

The girl smiled a little. "Or you would not have come? Then we should have had no opportunity of congratulating you on your triumphant acquittal. You see, it must be mentioned."

"I'm afraid there was a miscarriage of justice," said Winston quietly. "Still, tho it is a difficult subject, the deposition of the man I supplanted went a long way, and the police did not seem desirous of pressing a charge against me. Perhaps I should have insisted on implicating myself, but you would scarcely have looked for that after what you now know of me."

Maud Barrington braced herself for an effort, tho she was outwardly very calm. "No," she said, "no one would have looked for it from any man placed as you were, and you are purposing to do more than is required of you. Why will you go away?"

"I am a poor man," said Winston. "One must have means to live at Silverdale!"

"Then," said the girl with a soft laugh which cost her a good deal, "it is because you prefer poverty, and you have at least one opportunity at Silverdale. Courthorne's land was mine to all intents and purposes before it was his, and now it reverts to me. I owe him nothing, and he did not give it to me. Will you stay and farm it on whatever arrangement Dane and Macdonald may consider equitable? My uncle's hands are too full for him to attempt it."

"No," said Winston, and his voice trembled a little. "Your friends would resent it."

"Then," said the girl, "why have they urged you to stay?"

"A generous impulse. They would repent of it by and by. I am not one of them, and they know it, now, as I did at the beginning. No doubt they would be courteous, but you see a half-contemptuous toleration would gall me."

There was a little smile on Maud Barrington's lips, but it was not in keeping with the tinge in her cheek and the flash in her eyes.

"I once told you that you were poor at subterfuge, and you know you are wronging them," she said. "You also know that even if they were hostile to you, you could stay and compel them to acknowledge you. I fancy you once admitted as much to me. What has become of the pride of the democracy you showed me?"

Winston made a deprecatory gesture. "You must have laughed at me. I had not been long at Silverdale then," he said dryly. "I should feel very lonely now. One man against long generations. Wouldn't it be a trifle unequal?"

Maud Barrington smiled again. "I did not laugh and this is not England, tho what you consider prejudices do not count for so much as they used to there, while there is, one is told frequently, no limit to what a man may attain to here, if he dares sufficiently."

A little quiver ran thru Winston, and he rose and stood looking down on her, with one brown hand clenched on the table and the veins showing on his forehead.

"You would have me stay?" he said.

Maud Barrington met his eyes, for the spirit that was in her was the equal of his. "I would have you be yourself—what you were when you came here in defiance of Colonel Barrington, and again when you sowed the last acre of Courthorne's land, while my friends, who are yours too, looked on wondering. Then you would stay—if it pleased you. Where has your splendid audacity gone?"

Winston slowly straightened himself, and the girl noticed the damp the struggle had brought there on his forehead, for he understood that if he would stretch out his hand and take it what he longed might be his.

"I do not know, any more than I know where it came from, for until I met Courthorne I had never made a big venture in my life," he said. "It seems it has served its turn and left me—for now there are things I am afraid to do."

"So you will go away and forget us!"

Winston stood very still a moment, and the girl, who felt her heart beating, noticed that his face was drawn. Still, she could go no further. Then he said very slowly, "I should be under the shadow always if I stay, and my friends would feel it even more deeply than I would do. I may win the right to come back again if I go away."

Maud Barrington made no answer, but both knew no further word could be spoken on that subject until, if fate ever willed it, the man returned again, and it was a relief when Miss Barrington came in with Dane. He glanced at his comrade keenly, and then seeing the grimness in his face, quietly declined the white-haired lady's offer of hospitality. Five minutes later the farewells were said, and Maud Barrington stood with the stinging flakes whirling about her in the doorway, while the sleigh slid out into the filmy whiteness that drove across the prairie. When it vanished, she turned back into the warmth and brightness with a little shiver and one hand tightly closed.

The great room seemed very lonely when, while the wind moaned outside, she and her aunt sat down to dinner. Neither of them appeared communicative, and both felt it a relief when the meal was over. Then Maud Barrington smiled curiously as she rose and stood with hands stretched out towards the stove.

"Aunt," she said. "Twoinette has twice asked me to go back to Montreal, and I think I will. The prairie is very dreary in the winter."

It was about this time when, as the whitened horses floundered thru the lee of a bluff where there was shelter from the wind, the men in the sleigh found opportunity for speech.

"Now," said Dane quietly, "I know that we have lost you, for a while at least. Will you ever come back, Winston?"

Winston nodded. "Yes," he said. "When time has done its work and Colonel Barrington asks me, if I can buy land enough to give me a standing at Silverdale."

"That," said Dane, " will need a good many dollars, and you insist on flinging those you had away. How are you going to make them?"

"I don't know," said Winston simply. "Still, by some means it will be done."

It was next day when he walked into Graham's office at Winnipeg, and laughed when the broker shook hands and passed the cigar box across to him.

"We had better understand each other first," he said. "You have heard what has happened to me and will not find me a profitable customer today."

"These cigars are the best in the city, or I wouldn't ask you to have one," said Graham dryly. "You understand me, any way. Wait until I tell my clerk that if anybody comes round I'm busy."

A bell rang, a little window opened and shut again, and Winston smiled over his cigar.

"I want to make thirty thousand dollars as soon as I can, and it seems to me there are going to be opportunities in this business. Do you know anybody who would take me as clerk or salesman?"

Graham did not appear astonished. "You'll scarcely make them that way if I find you a berth at fifty a month," he said.

"No," said Winston. "Still, I wouldn't purpose keeping it for more than six months or so. By that time I should know a little about the business."

"Got any money now?"

"One thousand dollars," said Winston quietly.

Graham nodded. "Smoke that cigar out, and don't worry me. I've got some thinking to do."

Winston took up a journal, and laid it down again twenty minutes later. "Well," he said, "you think it's too big a thing?"

"No," said Graham. "It depends upon the man, and it might be done. Knowing the business goes a good way, and so does having dollars in hand, but there's something that's born in one man in a thousand that goes a long way further still. I can't tell what it is, but I know it when I see it."

"Then," said Winston, "you have seen this thing in me?"

Graham nodded gravely. "Yes, sir, but you don't want to get proud. You had nothing to do with the getting of it. It was given you. Now, we're going to have a year that will not be forgotten by those who handle wheat and flour, and the men with the long heads will roll the money in. Well, I've no use for another clerk, and my salesman's good enough for me, but if we can agree on the items I'll take you for a partner."

The offer was made and accepted quietly, and when a rough draft of the arrangement had been agreed upon, Graham nodded as he lighted another cigar.

"You may as well take hold at once, and there's work ready now," he said. "You've heard of the old St. Louis mills back on the edge of the bush country. Never did any good. Folks who had them were short of money, and didn't know how they should be run. Well, I and two other men have bought them for a song, and, while the place is tumbling in, the plant seems good. Now, I can get hold of orders for flour when I want them, and everybody with dollars to spare will plank them right into any concern handling foodstuffs this year. You go down tomorrow with an engineer, and, when you've got the mills running and orders coming in we'll sell out to a company, if we don't want them."

Winston sat silent a space turning over a big bundle of plans and estimates. Then he said, "You'll have to lay out a pile of money."

Graham laughed. "That's going to be your affair. When you want them the dollars will be ready, and there's only one condition. Every dollar we put down has got to bring another in."

"But," said Winston, "I don't know anything about milling."

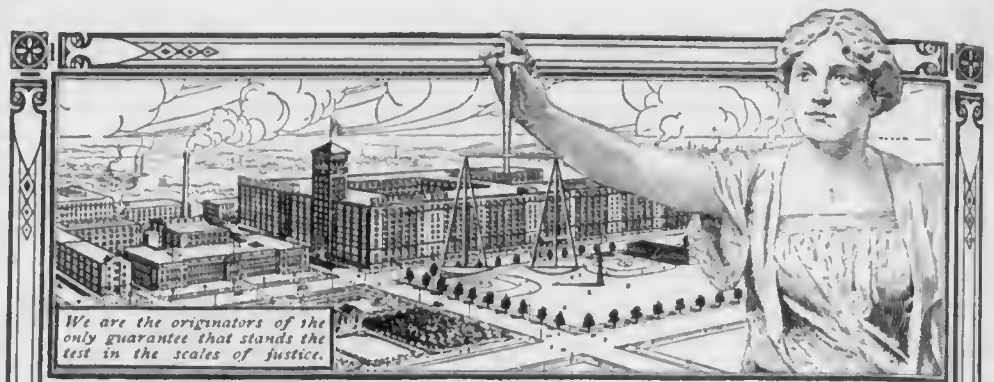
"Then," said Graham dryly, "You have got to learn. A good many men have got quite rich in this country running things they didn't know much about when they took hold of thom."

"There's one more point," said Winston. "I must make those thirty thousand dollars soon or they'll be no great use to me, and when I have them I may want to leave you."

"That's all right," said Graham. "By the time you've done it, you'll have made sixty for me. We'll go out and have some lunch to clinch the deal if you're ready."

(To be continued)

Corn Silage For Fattening Two Year Old Steers.—From the Missouri Experiment Station, Columbia, Missouri, comes its Bulletin No. 112 covering this subject. The Bulletin gives weight records, compares quality and cost of feeds, and outlines equipment and methods of feeding. It should be of interest to those interested in steer feeding and economical methods of feeding.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No. 7B-272— Girls', sizes 2½ to 6, prepaid price, $1.60.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 23, 1914.

Butter receipts were light and demand absorbed all offerings of fine goods at firm prices. There was a fair demand for desirable fresh eggs and the market ruled steady with prices under good control. Offerings of poultry were moderate but ample. Trade in fruit and vegetables was quiet, but values generally were well sustained under moderate offerings.

Butter.—Western creamery, 29c; extras, 27c; firsts to seconds, 23@25c; special prints, 33@36c; near-by prints 30c.

Eggs.—Candled 27@29c doz.; extras 24c. Current receipts at $6.60 per standard case.

Poultry.—Fowls, 18@18½c; old roosters 12@13c; pigeons, 30@32c pair.

Dressed Poultry.—Western fowls 12@18½c; roosters, 15c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 75@90c bu. Onions $3@3.25 per 100-lb bag. Peppers $1.50@1.75 per carrier. Eggplant $2@2.25 carrier. Lettuce $2.50@3.50 hamper. Beets 5@8c per bch. Sweet potatoes 45@55c bas. String beans $3@4.50 hamper Squash $2@3 per crate. Cucumbers, Florida $4@5 hamper. Celery $3.75 per crate. Cabbage, new $1.00@1.25 per hamper. Cauliflower $1.75@2.25 per ½-bbl. box.

Fruit.—Apples $4@6.50 bbl. Pineapples, per crt $3.00@4.00. Pears, 50@75c basket. Grapes $3@8 per keg; cranberries $3@4 box; lemons, $2@3 box; grape fruit $2@4 per box; oranges, $2@3.50 per box.

Hay and Grain.—No. 1 hay, large bales, $18@18.50; No 1 medium $17.50@18.00 no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00; straw No. 1 new straight rye, $16.50; No. 2 do., $15@15.50; No. 1 tangled rye straw new $12; No. 2 do., $11.00@12.00; No. 1 wheat straw, $10@10.50; No. 1 oat straw, $10.50@11; new shelled corn No. 2 yellow 74@74½c. Wheat No. 2 red $1.00½; No. 1 Northern, $1.05½@1.06½; No. 2 white oats 46@46½; No. 3, white 44½@45c; Standard white 45½@46c.

Coffee.—Rio 7s 8⅝c; Santos 4s 11½c. Mild Coffee.—Cordova 12½@16½c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.15; powdered, $4.00; granulated, , $3.90; standard granulated, 3.95; crystal A, $3.90.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅝@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs, 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6¾c; country, 6¾c; do dark, 5½c; do. cakes, 7c.

Philadelphia Retail.

Vegetables.—Onions 15c ½-pk. Peppers, 2 for 5c. Eggplants 10@25c apiece. Cabbage, 5@10c a head. Lettuce 10@25c. Beets new 5@10c bch. Sweet potatoes 15c ¼-pk White potatoes, 90c bu. String beans 20c quart. Tomatoes, hothouse 6 for 25c; cucumbers 10@15c apc. Celery 3 stalks for 25c. Squash 5@15c apc; cauliflower 15@25c apc; mushrooms, 40c lb.

Fruit.—Grapes 35c lb. Apples 20@25c ¼-pk. Pineapples 20@25c apiece. Cranberries 20c quart; lemons 15c doz; grapefruit, 2 and 3 for 25c; Oranges 30@45c doz.

NEW YORK PRODUCE

New York City, March 23, 1914.

First class butter stock commanded good prices. Large arrivals of eggs and advices of further shipments made prices lower and unsettled, with little demand in evidence. Fruit and vegetables show little change.

Eggs.—State and near-by hennery whites, fine to fancy 25@26c; gathered whites 25@33c; fair to good 22@24c; fresh gathered firsts to extras 20½@22c; seconds to thirds, 19@20c; no grades 17@19c; mixed 20½@21c.

Butter.—Creamery firsts to extras 25@28c; thirds to seconds, 20@24½c; state dairy 18@27c; packing stock 12@17c; process 16@21c.

Cheese.—Whole milk specials, 19c; do common to fancy, 16@18¾c; skims 5@15c.

Dressed Poultry.—Turkeys, dry, 21@23c; chickens, 14@25c; fowls, 12@18c; old roosters, 14c; ducks 12@18c.

Live Poultry.—Prices unsettled

Vegetables.—Cabbage $1.75@2.00 bbl. Green beans $2.00@$5.00 bas. Carrots $1.75@$2.00 bag. Cucumbers $1@$1.25 doz. Lettuce $1.00@2.00 bas. Squash, $3@3.50 bbl. Celery $3.00@4.50 standard case. Onions $2.25@3.00 100-lb bag. Tomatoes, $1.00@3.25 carrier; peppers $2.50@4.00 per box. Beets, $3.00@5.00 per 100 bunches. Potatoes $1.50@7.00 bbl. Sweet potatoes, $1.50@2 bbl. Eggplants, $2.25@3.50 per box. Cauliflower $2@3.50 standard crate.

Fruit.—Apples $1.75@2.00 bbl. Cranberries $11@15 bbl.

Grain.—Wheat No. 2 red $1.05½ No. 1 Northern, $1.03¼; corn, new No. 3 yellow 75¾c; oats, standard white 46@46½c.

BALTIMORE PRODUCE

Baltimore, Md., March 23, 1914.

Butter, eggs and poultry steady.

Butter.—Creamery, fancy 26@27c; do choice, 24@25c; prints 28@29c; blocks 27@28c; Maryland and Penna. rolls, 17@19c; process, 20@22c.

Eggs.—Near-by firsts, 28c; western, 28c; southern, 21c.

Live Poultry.—Hens 18c; chickens, 18c; old roosters 10@11c; ducks 20c.

Dressed Poultry.—Turkeys 25@26c; chickens, 18@22c; old roosters, 11@12c; ducks, 18@20c.

Vegetables.—Potatoes, Maryland and Penna 70@75c bu; beets, 5@8c bch; beans, green, $3.50@4 per basket. Celery $2.25@2.75 crate. Cucumbers $5.00@6.00 bas. Lettuce $3@3.50 bas. Tomatoes, $3.00@4.00 carrier. Onions $1.40@1.50 bu. Eggplant $3.00@3.50 crate. Squash $1.50@2 crt. Cauliflower 2.25@2.50 crt. Cabbage, $25@30 ton.

Fruit.—Apples, $3.00@4.50 bbl. Grapefruit $2.50@3.75 per box

Grain.—Wheat, No 2 red western, $1,00¼ Spot, $1.00½; corn yellow shelled, 70½c; Oats standard, white, 45¼@45½c; No. 3 white 44½@44¾c; rye, 60@69c.

Hay and Straw.—Timothy No. 1, $18.50; No. 2 timothy $17.00@17.50; do. No. 3, $14.00@15.50. No. 1, clover $16.00@16.50; No. 2, do., $13.00@15.00; No. 1, tangled rye straw, $11.50@12; No. 1 oat straw, $9.50@10.50; No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $31@31.50. Middlings, flour to white $29@30; western middlings $28.50@29; city mills, middlings, $28.50@29.00.

YORK PRODUCE MARKET

York, Pa., March 23, 1914.

The markets for the week were of the same character as the previous week, light supplies and uncertain demand. Eggs are off two cents. Butter is holding its own but surplus stock hard to dispose of. Potatoes are becoming stronger.

Eggs.—20@23c doz.

Butter.—Country, 30@35c; separator, 35@36c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Scarce. Hens 15@16c. Dressed poultry, 40@75c each.

Vegetables.—Potatoes 10@16c ½-pk; 50c@1.00 bu; cabbage 3@8c each; lettuce, 5@10c; beets, 5c bch; radishes, 5c bch; onions 5c bch., 12@18c per ½-pk; lima beans 14@16c qt; sweet potatoes, 12@15c per ½-pk; lard 14@16c lb; celery, 10@12c; peppers, 8@12c doz; turnips 10@12c ½ pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 22@25c qt.

Fruit.—Apples, 20@35c ½-pk; pears, 15@25c per ½-pk; chestnuts, 12@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.08 bu., corn, 82c; oats, 55c; rye, 77c; bran, $1.50 cwt; middlings, $1.60 cwt.

Wholesale Grain Market.—Wheat, 98c; corn, 67c; oats, 49c; rye, 67c.

WILMINGTON PRODUCE.

Wilmington, Del., March 23, 1914.

Butter.—Print butter, 38@45c lb. Creamery roll, 35@45c.

Poultry.—Chickens, dressed, 18@25c; ducks, 18@20c.

Eggs.—30@35c doz.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk. Cabbage, new 4c up. Sweet potatoes 40@50c bas. Onions, 10@12c ¼-pk. Eggplants, 10 each. Peppers 30@50c doz. Parsley, 1@5c bunch. Lettuce, 8@10c bunch. Beets new 12c bunch. Cauliflower, 20@25c each.

Fruit.—Apples, 15@25c ¼-pk. Pinapples, 20@25c apiece. Grapes 20@25c lb. Oranges, California, 25@30c doz. Florida, 25@30c doz. Bananas, 10@15c doz. Cranberries 20c quart. Grape Fruit, 7@10 each.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 23, 1914.

Beef Cattle.—There was scarcely any life in the market and tho the run of cattle was light prices moved downward on every grade. Lancaster County, Pa., Virginia, Ohio and Western stock was on sale. Calves closed at a sharp decline and cows were considerably lower.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,265	7,997	4,137
Previous week	2,285	5,873	5,650

Best steers	$8.50@8.75
Choice steers	8.25@8.50
Good	8.00@8.25
Medium steers	7.50@7.75
Common steers	7.00@7.25
Bulls	5.00@6.50
Fat cows	5.25@6.00
Medium cows	3.50@5.00
Thin cows	2.75@3.00

Veal calves lower.

Best calves	$9.50@10.00
Good to choice do	9.00 9.50
Medium	7.50@8.00
Common do	6.50@7.00

Sheep and Lambs.—Values in a general way showed no material change. With increasing arrivals the market manifested a clearing-up disposition.

Choice wethers	$6.00@6.25
Good do.	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.25@8.35
Good to choice do	8.00@8.25
Common to medium	5.50@8.00

Hogs.—Inquiry was of a seasonable character, with a strong undertone prevailing. Westerns as to size and quality $12.50@12.75.

City Dressed Stock.—Calves were a fraction lower, but outside of that meats in the choice and prime class commanded steady prices. Steers, 12@14c; heifers, 10½@14c; cows, 9½@11c. Veal calves, 13@14c; country dressed calves, 14@15c; extra do., 15½c. Sheep, 9@11c; extra wethers, 11½c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 23, 1914.

Cattle.—With a supply of 90 cars compared with 115 loads the week before, the market opened slow and ruled about steady on the fat tidy cattle except the weighty grades, which ruled a little lower as did the cattle of all weights that were on the plain and coarse order, which are slow sale at low prices. Fat cows, heifers and bulls sold at about steady prices. Best fresh cows stronger, while springers and medium grade fresh cows were slow and easier. Today's supply totaled 90 loads. The market ruled active with prices steady on all grades.

Good to choice	$8.40@9.00
Good 1,300-1,400 lb	8.30@8.60
Medium to good 1,200-1,300 lb	8.10@8.30
Tidy 1,050-1,150 lb.	8.10@8.35
Fair to medium, 900-1,100 lb	7.40@7.90
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs.	5.50@6.50
Rough, half-fat	5.00@7.00
Common to good fat oxen	4.00@6.50
Common to good fat bulls	5.00@7.75
Common to good fat cows	4.25@6.50
Heifers	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springer	25.00@85.00

Calves.—Veal calves in fair supply and market closed 50 cents per cwt lower than Monday's prices. Today's receipts 600 head

Heavy and thin calves	$5.00@7.00
Veal calves	7.50@10.00

Sheep and Lambs.—Sheep and lambs in light supply. Sheep met with the better demand and ruled steady on choice, while the plain and medium grades are very slow sale. Lambs met with a poor demand and top grades closed 25 cents lower than Monday, while the plain and medium grades are very hard sale. Today's receipts were 15 double-deck loads. The market was active and higher on lambs and best sheep, and firm on other grades of sheep. Spring lambs sold steady.

Prime wethers	$6.15@6.35
Good mixed	5.50@5.85
Fair mixed ewes and wethers	4.75@5.25
Culls to common	3.00@4.25
Prime lambs	5.50@8.25
Spring lambs,	9.00@11.00

Hogs.—The supply of hogs during the week has been fair and with a good demand the market closed 5 cents per cwt. higher on heavy hogs, while other grades sold 15 to 20 cents per cwt. higher. Today's receipts were 500 double-deck loads, and the market ruled steady.

Prime heavy	$9.25@
Prime medium weights	9.35@
Heavy mixed	9.35@
Best heavy Yorkers	9.35@
Light Yorkers	9.25@
Pigs	8.75@9.10
Common to good roughs	7.75@8.50
Stags	7.00@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., March 23, 1914.

Cattle.—The slow opening on Monday and the lower basis depressed the market for the balance of the week. The demand for mixed butchers was fair. On the close the market was slow on ordinary grades. With 3,000 cattle in the yards this morning, the market was strong with firm to higher prices on all grades.

Choice heavy steers	$8.50@9.00
Medium	8.25@8.60
Yearlings	8.00@8.50
Handy butchers	6.75@8.25
Good to choice fat cows	6.75@7.25
Good to choice heifers	6.50@8.00
Butcher bulls	6.50@8.50
Feeders	6.25@7.25
Stockers	5.00@6.25
Cows and springers	30.00@90.00

Calves.—The liberal receipts on Monday and lower basis had influenced the market thruout the week. The opening basis was $10@10.50 and the trade for the week was slow. On the closing days the trade showed some improvement and the basis was 50 cents higher. Calf receipts this morning numbered 1,000.

Choice veals	$10.50@11.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The trade at the opening was in good position and desirable grades 5 cents higher on account of the good general demand. Yearlings were in good demand and firm. Sheep were in good demand. The demand was better on the close from all sides. Yearlings ruled firm. With a 12,000 run, sheep and lambs were firm today.

Choice lambs	$8.25@8.40
Yearlings	7.00@7.25
Wethers	6.25@6.50
Ewes	5.50@6.00
Sheep	6.00@6.25

Hogs.—Notwithstanding the liberal receipts the trade was active and higher at the opening. The general demand was good. The basis on Yorkers was $9.15@9.25. Medium and heavy sold lower. On the close the trade was active and 5 to 10 cents higher. The pig trade was active; medium and heavy were higher. Today's receipts numbered 12,800 head. The market was strong.

Heavies	$9.25@9.30
Mixed and medium	9.25@9.30
Yorkers	9.25@9.30
Light Yorkers	9.25@9.30
Pigs	9.25@9.30
Roughs	8.30@8.50
Stags	6.50@7.50

Horses.—Some 550 head were sold at fair prices. Best workers were in demand.—S.

NEW YORK LIVE STOCK

New York City, March 23, 1914.

Beef Cattle.—Receipts for week 2,900 head. Market irregular

Steers	$6.50@9.35
Bulls	5.75@7.50
Cows	3.50@6.60
Dressed beef	12@13½c.

Calf receipts 4,700 head. Market higher.

Choice	$8.00@12.00
Culls	6.00@7.50

Dressed calves higher. Dressed veals, 13@18c.

Sheep and lamb receipts 7,100 head. Market steady.

Sheep	$4.25@6.00
Culls	3.50@4.00
Spring lambs	7.25@8.50

Hog receipts 10,900 head. Market lower. Choice, $9.20@9.40; roughs, 8.25@8.40.

BALTIMORE LIVE STOCK

Baltimore, Md., March 23, 1914.

Cattle.—Receipts for the week 1,348 head against 3,421 last week.

Steers	$6.25@8.35
Heifers	5.50@7.00
Cows	3.00@5.75
Bulls	5.25@7.00
Fresh cows	35.00@75.00

Sheep and lamb receipts for the week were 1,361 head against 3,596 last week. Light supply; market strong.

Sheep	$3.75@6.25
Lambs	6.00@8.60

Hog receipts for the week were 10,680 head against 11,876 last week.

Light western	$9.55@9.65
Heavy to medium	9.60@9.70
Near-by	9.55@9.65
Pigs	9.10@9.15

Calves.—Receipts for the week were 368 head, against 399 head last week. Liberal supply, market lower at $5.50@10.00

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., March 23, 1914.

Hay.—Receipts of hay have eased up considerably lately but demand is not very enthusiastic. However, the market is apt to rule stronger should the light receipts continue. Off grades are still hard to place as there is plenty arriving with no buyers. Light mixed and No 1 clover mixed are in fair demand

No. 1 timothy	$16.75@17.25
No. 2 timothy	14.50@15.50
No 1 light mixed	14.75@15.25
No. 1 clover mixed	14.75@15.25
No. 2 clover mixed	11.00@12.00
No 1 clover	11.00@14.50
No. 2 clover	10.00@12.00

Straw.—Demand fair, receipts not heavy but equal to demand.

No. 1 Oats	$9.00@9.25
No. 2 Oats	8.75@9.00
No. 1 Wheat	8.75@9.00
No. 2 Wheat	8.50@8.75
No. 1 Rye	9.25@9.50
No. 2 Rye	8.50@9.00

Ear Corn.—Demand is strong for good, sound, yellow ear corn, but there is considerable off-grade corn arriving which is hard to place.

New No. 2 yellow	70@70½c.
New No. 3 yellow	66½@68c.

Shell Corn.—Market looking a little stronger; prices higher; demand good.

New No. 2 yellow	73½@74c.
New yellow No. 3, natural	69@69½c.
New sample	66½@68c.

Oats.—Receipts continue liberal and demand only fair; market quiet.

No. 2 white	43¾@44c.
Standard oats	43@43½c.
Standard No. 3 oats	42@42½c.

Millfeed.—Bran scarce and in demand but middlings is quiet

No. 2 white midds	$28.00@28.50
No. 1 brown midds	26.50@27.00
W. W. Bran, course,	28.00@28.50
W. W. Bran, medium	27.50@28.00

NEW YORK HAY MARKET

New York City, March 21, 1914.

Hay prices are quoted as fairly steady. Receipts are increasing somewhat, amounting to 1,034 tons today. Timothy, No. 1, $1.05, standard, $1.00; No. 2, 95c; No. 3, 85@90c; clover 60@95c.

Straw rules firm. Receipts today were 20 tons. Oat straw, 55@60c bale; rye, 90@95c.

NEW YORK MILK MARKET

New York City, March 23, 1914.

The conditions have changed little in the market in the course of the last week. The supply is increasing while the demand remains poor for the season of the year, owing to the continuation of cold weather. The supply, in fact is greater than usual for the time of year. Owing to the heavy ice in the Hudson river, the Ramsdell boats will not begin carrying milk much before April 1.

The receipts of milk and cream in 40-quart cans for the week ending March 21, were as follows:

Railroad	Milk	Cream
Erie	46,044	2,126
Susquehanna	8,162	352
West Shore	17,360	440
Lackawanna	57,575	1,510
N. Y. Central (long haul)	83,463	1,624
N. Y Central (short haul)	11,910	89
Ontario	39,142	2,834
Lehigh Valley	31,907	1,052
Homer Ramsdell Line	....	....
New Haven	8,336	175
Pennsylvania	4,347	113
Other sources	1,670	18
Totals	309,916	10,312

ELGIN BUTTER QUOTATION

Elgin, Ill., March 23, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 26⅝ cents.

CHICAGO HORSE MARKET

Chicago, March 23, 1914.

Horses continued to be marketed in increasing numbers last week, but a much better general demand made firmer prices and some sales showed an advance of about $10 per head. Drivers sold at $75@125 mainly, with livery horses bringing $310@325 per pair while team horses went at $165@230. Small chunks sold at $185@235, and there was a lively trade in farm horses, geldings bringing $280@400 per pair and mares $325@575 per pair. Choice pairs of heavy drafters found an outlet at $575@650, with not many prime enough to sell up to $600. Drafters sold singly at $185@300 or more.—F.

TOBACCO MARKET

The pooling movement was the principal topic in market circles. At present less than one-third of the 1913 crop has been sold. Local packers are afraid to take hold owing to the perturbed situation and the factories are not in the market at present; hence there is practically no movement of the new crop. The cigar industry is not flourishing thus contributing another stagnant feature to the situation. Growers are anxious to begin preparations for the new crop but it seems that one cold blast follows another so closely that there is little opportunity to pursue spring operations. The present outlook would indicate the probable growth of an average crop, and should the pooling movement prosper during the next few weeks the acreage will be raised to some extent.

The interest in the Kimbrough pooling movement and the new Seedleaf Tobacco Growers' Company continued unabated. At a recent meeting Mr. Kimbrough further strengthened his claims as an organizer by reference to the success he has met in other sections instructing the wheat growers of the northwest, the tobacco farmers of Kentucky, the fruit growers of Florida and the cotton raisers of Georgia. He explained the proposed scale of future prices which are to increase gradually from $10 and $2.50 at present to $15 and $5 in 1918. Local packers and other enemies of the prosperity of tobacco raisers are directing various attacks against the new movement, prominently the claim that the organizer is not a practical tobacco man and is thus not able to understandingly grasp the situation. Of course such a claim is not worth serious consideration. It is the part of all successful organizers to deal with men and this success is measured by the worth of their plans and their ability to select efficient leaders. It seems that local banks, too, are militating against the movement, but it is probable that they are controlled by tobacco interests.

In view of the unjust attacks that have been made on the movement the board of directors of the Seedleaf Growers' Company adopted resolutions of confidence in the new movement concluding with the significant declaration that the whole object is to benefit the tobacco grower by informing him as to the market conditions and the general management of his business.—H. E. Tweed, March 23, 1914.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Splint.—A 2-year-old colt, only partially broken to drive, shows some soreness and lameness in right fore leg. I have examined his leg carefully and find a small hard bunch on lower part of knee and on inside of leg. He shows most soreness when first taken out of stable or after standing still a few minutes, but after a short drive he travels almost sound. W. H. J., Scranton, Pa.—I am quite sure colt is suffering from splint lameness. He may strike shin with opposite foot. If so, by proper shoeing you will remove cause and this will greatly aid you in effecting a cure. Give him rest. Apply 1 part red iodide mercury and 8 parts fresh lard to bunch every 6 or 8 days.

Cracked Heels—Scratches.—We have a 3-year-old colt that has been driven almost daily. He has scratches. Home remedies appear to do very little good. He seems to be in good health, but hind legs stock during night and Sunday. L. S., Meadville, Pa.—The legs should be rubbed dry or be bandaged in cotton when brought into barn. If hair interferes with sores, cut it off and dissolve ½ lb. acetate lead, 3 oz. sulphate zinc and 3 oz carbolic acid in a gallon of water and apply to sores, 3 times a day. Also give him ½ oz. Fowler's solution at a dose, 3 times a day.

Garget.—I have two cows that have bunches in their udders. Very little milk can be drawn from either of the quarters affected. When they came fresh the calf sucked for three days, after that we milked them. D. J., Brockton, N. Y.—There are many causes of udder troubles in cows, but I believe poor milking is one of the chief causes. When a cow is milked every drop should be taken from udder; deep milkers should be milked three times a day. Lazy milkers destroy udders. Apply 1 part iodine and 15 parts lard to bunches, 3 times a week. Hand rubbing has a good effect.

Too Much Corn to Pigs.—We have 18 pigs, five months old, that are not doing well. Four of them show weakness in either back or hind legs. They have a nice dry pen and are fed plenty of corn and have good water to drink. I keep these pigs on cement floor, but the pen is on dry land, therefore I do not believe it too damp for hogs. M. T. A., Syracuse, N. Y.—Their food supply is unbalanced for either such pigs or for older hogs. Too much corn and fat-producing food cause weakness of this kind. Feed less corn, more oil meal, roots and tankage, then they will soon show improvement. See that they have more exercise and if their bowels are costive give them either Epsom salt or castor oil. Give each sick pig 10 grains sodium salicylate every time you feed them.

Leg Weakness.—Two chickens are troubled with leg weakness. I keep 48 fowls and only two of them seem to be ailing. P. G., Albany, N. Y.—Leg weakness is not a disease, but a result of other ailments. Having only two sick fowls and not knowing what ails them, you had better keep them by themselves or destroy them. Mix together equal parts ginger, gentian, bicarbonate soda and charcoal and give each sick fowl 30 grains at a dose, 3 times a day.

Malignant Tumor.—Cow has a sore on side of face, below eye, that partially heals and from time to time breaks open, discharging pus. This is the third winter she has been troubled with these small boils on face. When warm weather comes the boils heal up and scabs dry off but her face remains swollen and thickened. She is in thriving condition and eats well. She is also a regular breeder. This winter we have been feeding her milk to hogs. J. W. D., Newport, Pa.—A chronic ailment of this kind is not easily cured. Apply iodine to swollen portion of face, 3 or 4 times a week, especially to wall of abscess. Give her a tablespoonful of hypo-sulphite of soda at a dose in feed, 3 times a day. If there is no pus coming from sore I know of no reason why her milk could not be used.

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Fredonia, Pa., June 17, 1913.
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Milroy, Pa., Dec. 26, 1913.
Dear Sirs:—Enclosed find check for $160 in payment of the gasoline engine bought from you on the 30 days trial offer. It has proved satisfactory and works fine. Yours truly, W. D. McNitt.

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PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880
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Headlee Dr. T. J.
Rutgers College

Commission Merchants and The 35-Cent Dollar

By FRED W. DEAN, Susquehanna Co., Pa.

FRED W. DEAN.

Having been a shipper of farm produce for 30 years, I long since discovered discrepancies in returns from commission men that could not be accounted for in any way except that the goods were grafted. In the fall of 1907, I shipped 204 barrels of fancy Baldwin apples to a well-known and supposedly reliable commission house in a large city in western Pennsylvania. In a short time I got returns for 176 barrels of apples at a very low price. A letter accompanying the returns stated that the apples were badly rotted and that there was a shortage of 28 barrels because of the rotten condition of the fruit; also a charge of $10 for labor in resorting the apples. This letter explained that the charge covered only a part of the labor of resorting, but that they felt sorry for me and so only charged a part of the cost up to me. The balance of the apples, they said, brought a low price because of the dull color and poor appearance of the fruit after being sorted over.

My loss being something over $1 per barrel, or over $200 on the lot, I naturally felt quite worked up over the deal. I wrote the firm a letter stating in substance that they were thieves. I got a letter in reply intimating that if I wrote them any more such letters they would have me arrested for using the mails for uttering a libel. I was somewhat worried over this state of affairs, so I let the matter drop for the time being. Four years later I went to another shipping station in this state and opened up correspondence with this same firm under an assumed name, stating that I had a few nice apples to ship to some reliable commission house and that I understood that they were a reliable house. I soon got a reply asserting their reliability and saying that they would be very glad to handle my goods and predicting that the deal would be mutually beneficial.

Upon receipt of this letter I made a shipment of barreled apples in marked packages, leaving another shipment with a friend to be shipped one week later. I then took the train for the city. Upon arrival I secured a room near the produce district, under still another assumed name. The following morning I went into the produce district, making the acquaintance of my commission merchant, as a buyer of fancy apples. In about one week, I discovered early one morning that my apples had come in during the night and were at the freight station. I kept close watch and at length saw the firm's team come and get these apples. I next transferred my activities to the wholesale house of the firm upon the street, where the goods were soon unloaded. I appeared upon the scene early in quest of fancy Baldwin and Spy apples, of which my shipment consisted. After being shown several lots, none of which suited me, I was shown my own goods. These I purchased, being careful to take an itemized account of sales or purchase.

After buying the goods I secured the services of a cartman and took the apples to a cold storage plant in the city and put them in storage. I then stayed around the city, calling upon this house every day or two. I bragged up the goods I had bought and mentioned that if they should get any more apples like those, I would like to buy them. As the time drew near for the next shipment to arrive, I again kept watch at the freight station. Again early one morning I discovered that my second shipment of goods had arrived during the night. I saw the apples carted to the wholesale house and unloaded as before. I again appeared on the scene as a purchaser, but this time I was recognized at once and notified that they had another consignment of apples from the same party that I bought of before; and they certainly did brag up those goods as being very fine. I quietly purchased these goods and, as before, took an itemized bill of the goods; and, as before, I took them to the cold storage plant and placed them in storage. I then left for home.

I got my mail thru a friend. When the returns came in on the first shipment, the price was short about 50 cents on each barrel, and when the returns came for the second lot, they were short about $1 per barrel. Between the two shipments the market price of apples had advanced about 50 cents per barrel. I then wrote the firm to know why my second shipment of apples had not brought a better price, calling attention to the advance in the meantime. I also asked them to give me the name and address of the party who had purchased the apples as I wished to come to their city and interview him. In reply to this I got a letter saying that the apples arrived in bad order and they sold them to a cheap peddler for cash and that they did not get his name and that their books did not show who he was.

I expected just such a letter as this from my previous experience. Armed with this letter and others, also the bill of sales and bills rendered, I went back to the city and secured the services of a good lawyer, and commenced prosecution. All at once there was consternation in the whole produce section of the city. The commission men were organized into a league and one man's fight was every man's fight. A conference was held at their suggestion in my lawyer's office at which several prominent men of the city, including a state senator, were present. I was threatened with dire calamity. I found out that the produce dealers' association was more worried about the publicity of the deal than they were about the legal part. With their influence they appeared to feel that they could handle the

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HERTZLER & ZOOK CO., Box 118, Belleville, Pa.

legal fight, but the newspapers would got hold of the evidence and it would not do to let it get out. A claim set up by the firm was that they had sold the goods to themsolves at the depot, and that I got the market price at the switch, and the advance was theirs. But the bill rendered contained a charge for cartage of 5 cents per barrel, so they were balked there and their claim would not hold water.

As I held both ends of the bag and also the goods and the letters I was not much worried about the outcome of the deal. The parties, however, were stubborn and the case was fought clear up to the door of the grand jury room before settlement was secured. The firm paid the full amount, including balance on the old account of four years previous. After settlement was secured, we got quite chummy and the head of the firm, as we parted at the close of the deal, said: "Well, Mr. Dean, I am no worse than the rest. They all do the same thing." I might mention that this man was a prominent member of the church and stood high in the business community. My lawyer complimented me upon the legal aspects of the case, as I had the avenues of escape all cut off before I pulled the strings.

NOTE:—The second article in this series will be published next week.—The Editors.

Growing of Winter Vetch.

By Prof. A. E. GRANTHAM, Delaware Experiment Station.

Winter vetch is a legume that deserves to be better known by the eastern farmer. The plant is adapted to a variety of soils, altho a sandy loam will probably give the best results. Any soil that is well drained will give a good growth of vetch. The extreme types of soil, such as the clays and even some of the more sandy soils, will produce an excellent crop if properly managed. On the heavier lands, such as clay loam, earlier seeding is desirable, owing to the less rapid fall growth on such soils.

The vetch plant has a large capacity for gathering and storing nitrogen and it probably surpasses in this respect any of the legumes which have equal periods of growth. While the plant does not have the root system of the clovers, yet the growth made above ground is very heavy. Investigations show that a ton of dry vetch contains phosphoric acid and 48 pounds of pot- 54 pounds of nitrogen, 19 pounds of

SAND VETCH AND CRIMSON CLOVER MIXED AND SOWN AT LAST CULTIVATION OF CORN.
Photo was taken in late October.

ash. These figures indicate the high fertilizing qualities of the crop.

Winter vetch starts growth rather slowly and should be sown early enough to become well established before winter. Seeding from the 15th of August to the first of September will generally be satisfactory if sown on specially prepared land. As the plant is a winter legume, it best serves the purpose of soil improvement by sowing in the standing corn, tomatoes or after early potatoes have been removed. Where it is desirable the land may be especially fitted, as in the case of wheat or oats stubble. In the open, sowings may be made a little later than among growing crops. In corn or tomatoes vetch may be sown broadcast at the last cultivation of the crop. If conditions are not favorable for sowing at this time, the vetch may be sown broadcast in the corn and covered with a small A-harrow run between the rows.

Vetch has some advantage over crimson clover from the fact that it may be planted or covered deeper than crimson clover. One of the drawbacks to the culture of crimson clover in corn is often due to the lack of moisture at the surface of the soil. As the seed will not allow deep covering, the clover may fail to come up or the young plants die from drought. Vetch may be covered much deeper, in that way coming in contact with the moist soil. To get a good stand of vetch, about 30 pounds of seed are required per acre. With good seed and a well prepared soil, 18 or 20 pounds of vetch will make a good stand.

Vetch may be mixed with either rye or crimson clover and grown together. If the vetch is to be cut for hay, it will be necessary to sow with either wheat or rye to hold up the vetch. This mixture should be harvested when the rye or wheat just begins to fill. Large yields of fairly good hay can be grown in this manner. Three pecks to one bushel of rye and 20 pounds of vetch are used for an acre.

Where winter and spring pasture is desired, as well as a green manure crop, crimson clover may be added to the rye and vetch. This makes a very thick growth and will afford considerable spring pasture. The seeding mixture is composed of 8 pounds of crimson clover, 15 pounds of vetch and two pecks of rye. A machine that we have found very useful in sowing this mixture is a one-horse wheat drill made to sow wheat between the rows of standing corn. The crimson clover seed is placed in the grass seeding compartment of the drill while the rye and vetch mixed are put in the grain box. In this way the rye and vetch are sown at the depth of wheat while the clover is lightly covered by the drill hoes.

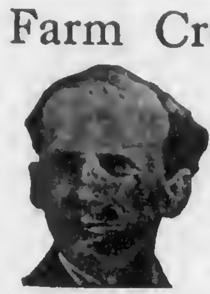
Vetch takes up considerable quantities of the mineral fertilizers, phosphoric acid and potash; therefore a moderate application of a mixture of 4 parts of acid phosphate to 1 part of muriate of potash should be used. Where vetch has not been previously grown, care should be taken to inoculate the seed as the growth is greatly stimulated by thoro inoculation. Cultures for inoculation may be secured from commercial concerns or from the Department of Agriculture at Washington. Unsatisfactory results with vetch are often due to lack of inoculation.

If the vetch is grown for green manure alone, no support crop need be sown with it. Our experience has been that crimson clover and vetch sown together will make a greater growth for plowing under than either crop alone. The crimson clover spreads out close to the ground while the vetch makes little growth at the base and trails like a vine. The clover will prevent the vetch from lying so flat on the ground.

Whether grown alone or in combination with other crop, vetch will be found decidedly beneficial in the restoration of worn-out soils. In hardiness it will surpass crimson clover and can be grown anywhere in the corn belt. The seed of vetch is becoming cheaper year by year, which will allow more extensive sowings. There is no reason why the seed cannot be produced at home for seeding purposes. Since a support crop must be used, the rye is threshed with the vetch. The mixture may be used for seed again. A machine, it is claimed, has been recently invented that will separate the vetch seed from the wheat or rye.

In buying vetch seed, be sure to get Hairy or Winter vetch. The spring vetch, the seed of which is sometimes mistaken for hairy vetch, is not hardy and will be killed by the winter.

Farm Crop Notes



By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Some Questions

Flax Seed and Buckwheat.—James R., North Carolina, writes: I have some whole flax seed. How could I prepare it for hogs, and how should it be fed? Can buckwheat be threshed with a common grain thresher? How should it be fed to hogs?

I do not think whole flax seed is ever used in any considerable quantities. Flax seed meal is made by grinding the cake produced by the process of pressing the oil from the seed. Even this must be fed in relatively small quantities. Buckwheat is threshed on a regular grain thresher. The concave holding the under teeth is generally removed, turned upside down, or is lowered beyond reach of all cylinder teeth. If left as for other grain, the buckwheat is badly broken. Buckwheat may be ground or chopped as other grain, and should be mixed with other grain. When fed in any considerable quantities to hogs, it often produces irritating skin eruptions.

Preparation for Corn, Potatoes and Tobacco

J. N. L., Lancaster Co., Pa.—"I have a field that was in corn last year. It was sown to crimson clover. I got a fair stand. I gave the field a pretty fair coating of manure. Part of it will be planted to corn. I have been thinking of liming the field after it is plowed. What kind would you prefer and how much would you use? What do you think of broadcasting about 400 or 500 pounds of a 10-7 fertilizer? The corn will be planted in check rows. How far apart and how many grains to the hill? Another part of the field will be planted to potatoes. Will the clover and manure give me enough nitrogen, and what do you think of about 500 pounds per acre of a 10-7 fertilizer. The rest of the field will be planted to tobacco. Would 3-3-20 fertilizer be all right? Some of my clover leaves are red. Does that indicate that the land needs lime? Would broadcasting the fertilizer for potatoes be better than drilling in row."

The amount and kind of fertilizers suggested by our friend is probably as good as could be suggested at long range. No opinion will be expressed for tobacco fertilizer as that requires a still more intimate knowledge of the soil in the field where it is to be used. I am glad to see a more general recognition of the need for more phosphoric acid than potash. This is true on most Pennsylvania soils.

It is best to broadcast at least two-thirds of the fertilizer, and distribute the balance in the row. It is possible that it would pay to add some nitrogen to the potato fertilizer, say about 2 percent, or, to distribute 100 pounds nitrate soda along the row and cultivate it in when the tops are 4 or 5 inches high.

As to the kind of lime to use, that will depend upon the relative cost. Several splendid articles have recently appeared in this paper on that subject. The last one in issue of March 14th. You can usually get more lime for a dollar in the burned, lump form than any other but when the ground limestone can be bought cheap enough it is preferable, but remember to use twice the quantity.

Some of the largest yields of corn raised in southeastern Pennsylvania are planted so as to secure three stalks to the hill and the rows 46 to 48 inches apart. It is hard to say what is the matter with the clover plants. There are several insects as well as fungus diseases that injure clover. If it does not die and is fairly thrifty, it is possible that an application of lime will remedy the trouble.—R. P. K.

CITY MARKET PROBLEMS

Distribution Needs

I read with interest an editorial in a recent number of Pennsylvania Farmer about a municipal market that the city of Philadelphia is preparing to test out. The proposed system was to provide a means for the farmers of the surrounding sections to place their products directly before the city consumers thereby dispensing with the middle men. I also note that you say the success of the undertaking will depend largely upon the extent to which the farmers make use of the opportunity offered. This is a matter of importance to both the farmer and city consumer. To my mind there are three very important items that must be taken into consideration: First, the city must provide the market place; second, must teach the city consumer to go to market and buy direct; third, must provide an adequate delivery system from the market place to the homes in every section of the city.

The third item will prove the hardest one to solve, and without it I fail to see how a farmers' market of any importance can be a success. I am not wise enough to solve the riddle, but firmly believe that a trolley-freight system, thoroly organized and run from the market place to all parts of the city, at least two days per week, would be the means of saving thousands of dollars each month to the householders of Philadelphia, and also help the farmers receive more satisfactory returns for their products. With trolley-freight cars built for the purpose a large amount of farm produce could be delivered without interfering with traffic, and add to the revenue of the operating company.

The city should have at least two large markets or receiving stations, one along the Delaware River front and another along the Schuylkill, where farm products could be delivered by tide water and rail. They should there be sold direct to the trade, both wholesale and retail, without being carted thru the rough streets by careless drivers from the depots to commission houses and then thru the hands of so many middle men as is now the practice. The business farmer does not have time to go to market in truck season. He sells his goods where he can get the best price. Last July I quit sending cucumbers to Philadelphia when selling for 60 cents per basket, less freight 6 cents and commission 6 cents, netting me 48 cents per basket. I sold them to a local dealer for $1.05 per small crate, less 10 cents for crate, netting me 95 cents. They were shipped with green tomatoes in iced cars to Arizona.

From the farmer's viewpoint the question of a municipal market in Philadelphia can be summed up in a very few words: Give us a real farmer's market, worthy of the name with an adequate delivery system. Keep out the huckster and fakers, and we will ship our products fresh from the farms.—W. S., Gloucester County, N. J.

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Horticulture

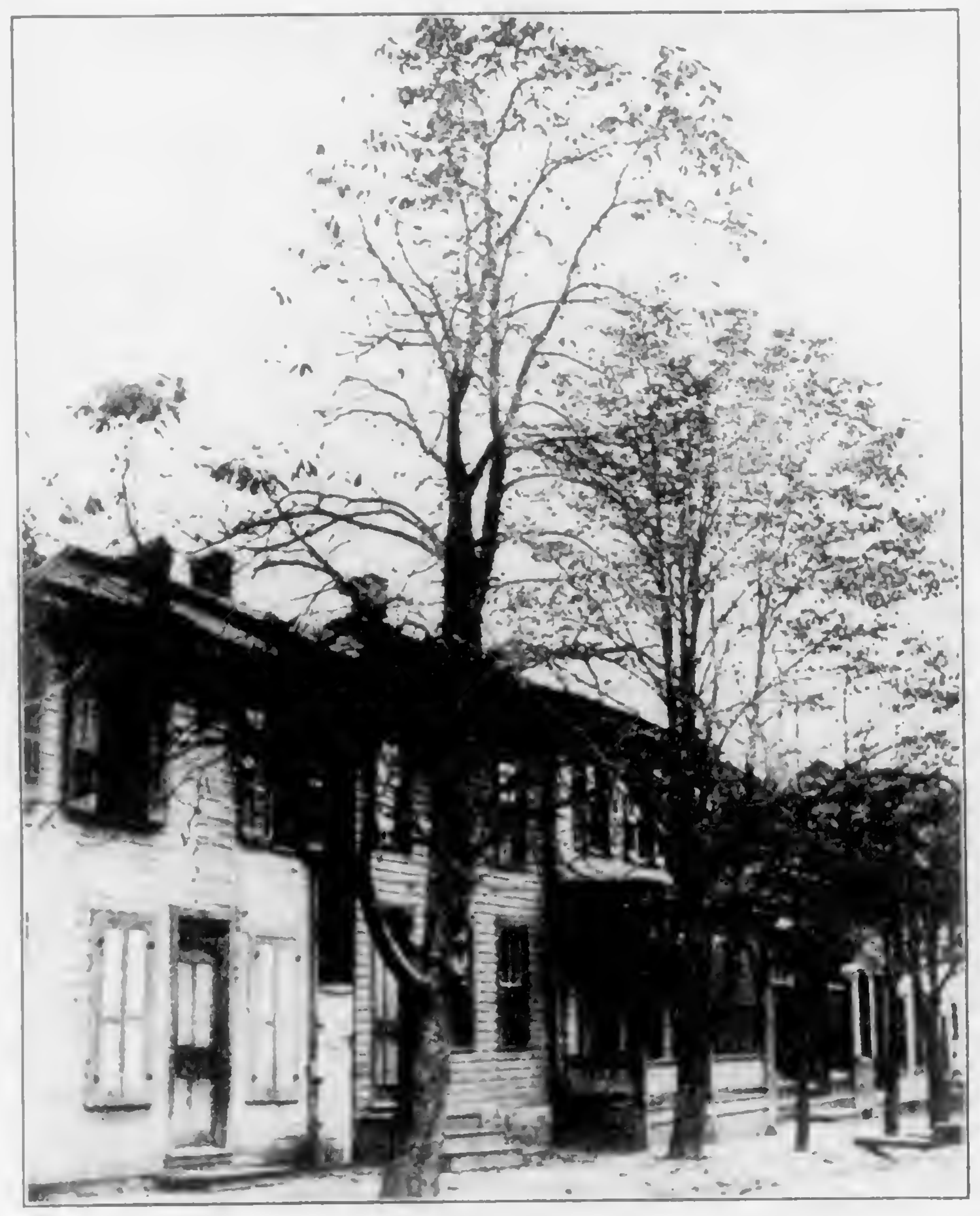
SELECTION OF SHADE TREES

An item to which too little importance is often attached is the selection of shade trees. As with all other matters pertaining to the house and grounds, a little thought at the right time will mean much toward future comfort and satisfaction.

Of the trees used for shade purposes may be mentioned the horse chestnut, the North Carolina poplar, the ash, the locust and the maple. The maples include several different types, viz; the Norway maple and the silver maple. To this list may be added also the weeping mulberry, the elm and the oriental plane.

In selecting trees for shade purposes see that they are varieties that tend to produce heavy leafage at the time when shade is needed; that thrive in the particular climate desired; that do not have heavy masses of roots to tear up sidewalk materials and close up sewers or drains; and, finally, trees that hold their leaves until late fall.

Among the trees named the horse chestnut is one of the most used and poorest of the shade trees. Its leaves begin to die and fall as early as the middle of August, especially when the tree becomes old. These leaves keep sidewalks and lawns littered up. With the season's advance comes the crop of horse chestnuts. Hulls and nuts increase the litter.



HORSE CHESTNUT TREES BARE AND UGLY NOV. 1.

The North Carolina poplar has enjoyed much popularity. It has heavy foliage and is easy to grow. When it is used in cities or towns where there are pavements and sewers, the roots cause damage. Many municipalities now have ordinances prohibiting their use.

With the exception of silver maple all maple trees are excellent for shade. The Norway is best for city conditions particularly where soot and drouth are to be encountered. Maples are largely used in the North for shade purposes.

In some sections the weeping mulberry, which has a heavy foliage, is used. Because of its stateliness the elm makes a good ornamental. Its leaves, while small are borne in abundance. The ash is a good shade producer and holds its leaves until late in the season.

For ornamental and shade purposes the Oriental plane or buttonwood tree is giving excellent satisfaction. It combines beauty, heavy foliage and thriftiness and does not shed its leaves early. The second illustration shows two of these trees. The photograph was taken November first and indicates the tenacity with which the leaves cling to the tree. Contrast these trees with the horse chestnut trees shown in the first illustration, with leaves few and far between.—E. E. Claspby, Mifflin Co., Pa.

ORCHARD HEATING

Some interesting information on the subject of heating orchards as a means of saving budding fruit trees from freezing by reason of late spring frosts is contained in a recent bulletin from the department of Agriculture.

Of the classes of heaters used there are the oil burning and coal burning varieties. The oil burning heaters are of all sizes and shapes at prices ranging from 20 to 75 cents each. There are many different makes which may be compared by securing catalogs from the different manufacturers. The lard pail type is extremely serviceable and simple and is easily stored because it nests and requires little space, and may be made by the local tinsmith if desired. A useful size is 7 inches across at the bottom, 9 inches at the top and 12 inches high, which will hold 3 gallons of oil and burn about one quart per hour, thus burning 12 hours at one filling. Smaller heaters have the disadvantage of requiring to be filled often. This type is fitted with cover. The rectangular type is usually divided into a storage compartment and burning compartment, both being provided with covers. The size of flame can be controlled to suit the temperature of the air. This type is large and rather costly, very serviceable and desirable, but requires considerable storage space. Empty metal paint kegs, fitted with covers, may be utilized.

In lighting new oil heaters it is usually necessary to use burlap or excelsior to act as a wick. After a deposit forms on the sides of the heater the wick is no longer necessary. Usually a few drops of gasoline are thrown over the oil and the torch applied at once. A wad of cotton wrapped with wire and dipped in oil makes a good torch. There is on the market a combination gasoline discharger and torch, which is extremely useful.

Of the coal burning class of heaters are the circular or angular types with parallel sides or inverted cone-shaped with broad flaring sides. The latter is always lighted from the bottom, while some of the former are lighted from the bottom and others from the top. Kindling wood and oil-soaked burlap or excelsior are necessary aids in lighting the coal burners.

Small piles of wood, brush, oil-soaked sawdust and other combustible materials are sometimes used as makeshift heaters, and often with good success. The object is to produce heat at the proper time and place, no matter what is used to do it.

Comparing the oil and coal heaters, we find that the oil heaters are quickly filled, easily lighted, throw off the maximum heat almost instantly, can have size of flame regulated by the cover, can be replenished quickly and can be extinguished instantly by replacing the cover. The coal heaters require considerable time and care to be filled properly, are slow in starting when lighted, throw off little heat at first, cannot well be exinguished except by dumping, and even then the fuel will continue to burn for some time; can be quickly replenished while burning, and must be refilled after each burning.

Where coal is cheap coal heaters may be most desirable even tho more labor is required in operating them; otherwise the oil heaters are to be preferred; soot from oil heaters may, it is suspected, collect in sufficient quantities on the blossoms to prevent pollination. This point remains to be proven. As to the number of heaters necessary, better have too many than too few. They should be placed from 20 to 22 feet apart each way in rows between the trees, rather than near to or under the trees, and on the windward side they should be about 10 feet apart in a row, perhaps 15 or 20 feet away from the first row of trees and outside of the orchard. This outside row will thus have an extra number of heaters because it must protect the first row of trees and because the heat from it is so much scattered that fewer heaters could not give the necessary protection. Heaters are placed in rows to facilitate filling, lighting and extinguishing.

As soon as buds begin to open 32 degrees had better be warning of trouble. Unopened buds will stand a lower temperature and heating is seldom resorted to until they begin to open. Do not burn fuel uselessly. Have tested thermometers distributed thruout the orchard and at a couple of points outside the orchard for comparison. If the temperature goes down slowly during the night and reaches 32 degrees a short time before sunrise, it will not be necessary to light the heaters. If it reaches 32 degrees earlier in the night, every fourth heater should be lighted and more if necessary to keep it at 32 degrees or a little higher. The thermometers outside the orchard must be watched so as to know how cold it is away from the heated area. In case of a rapid drop in temperature in the evening or during the night, the grower must be alert and get fires going before 32 degrees is reached, as it is easier to maintain a safe temperature than it is to raise an injurious one.

An alarm thermometer working automatically and connected with the house may save time and worry in keeping the temperature of the orchard properly adjusted.

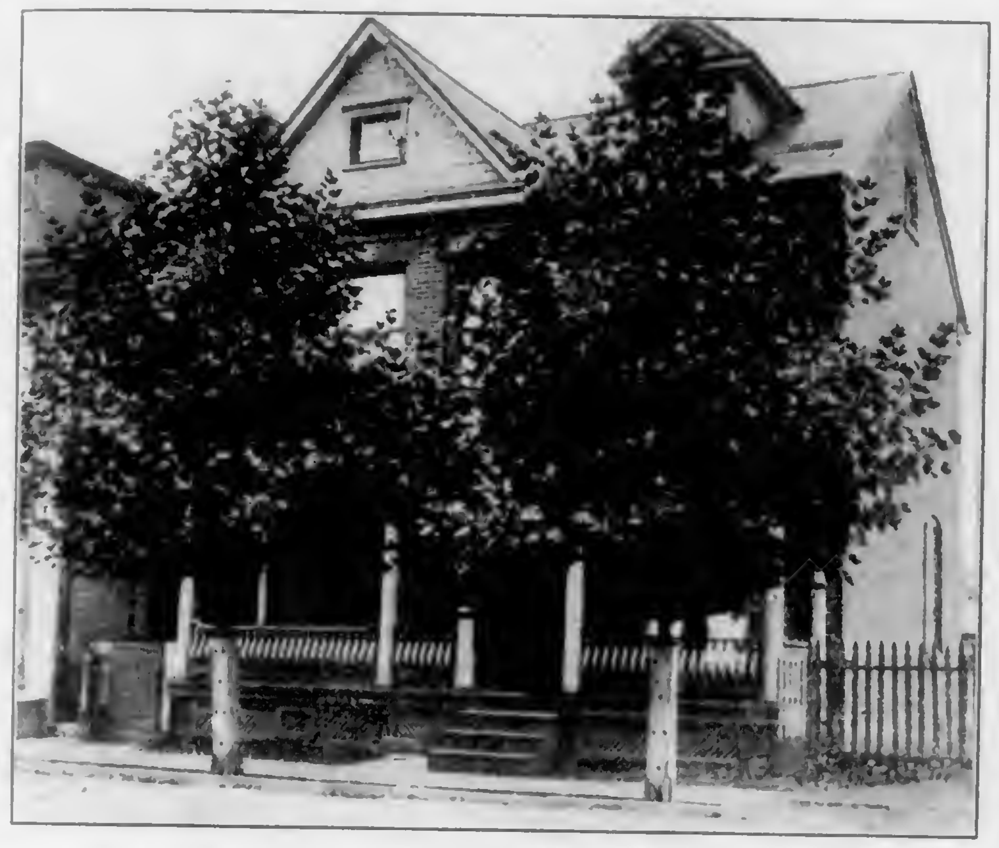
It is essential to have storage tanks near at hand for convenience in refilling the heaters.

One hundred heaters per acre will burn 100 quarts of oil per hour or 100 gallons in 4 hours. In most sections a consumption of 300 gallons or less per season is sufficient but it is not safe to risk having less than this amount on hand. A thoro understanding should be had with the jobber to ship oil immediately upon receipt of telegraphic orders.

Storage tanks may be made of wood, iron or cement. A wagon tank with large faucet and short piece of hose is desirable for distributing tho oil in the orchard.

The kind of oil used, whether crude, fuel or distillate, will depend upon which is available in the different sections. Oils with a paraffin base are better than those with asphaltum base, the later leaving too much unburnable residue.

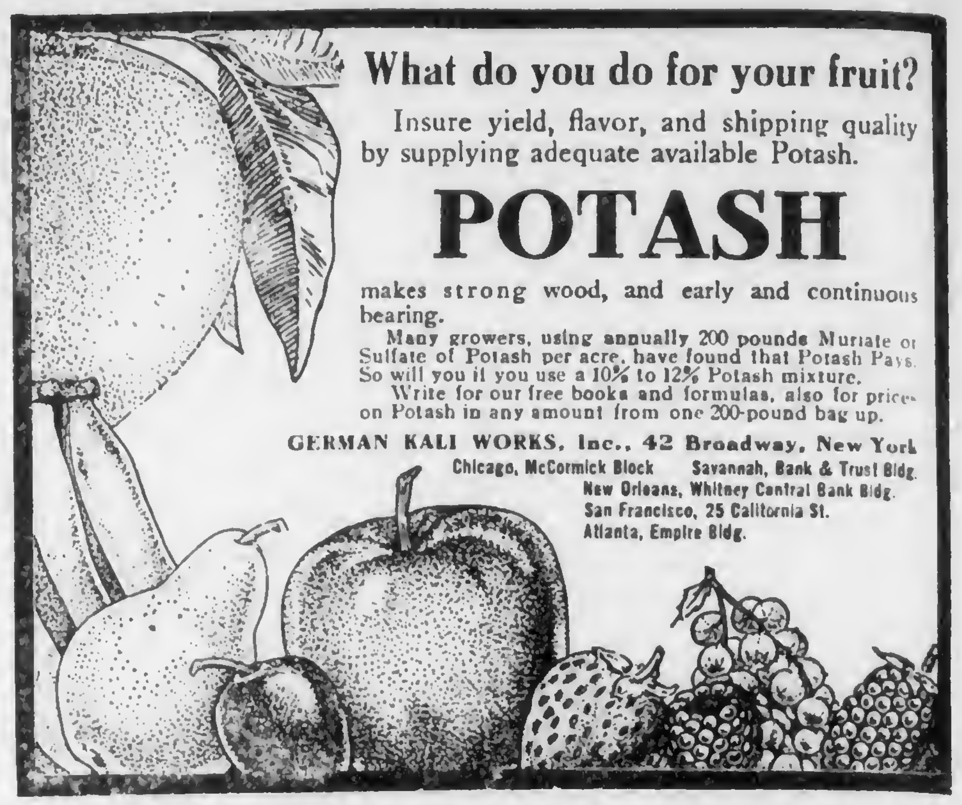
Oil heaters cost from $20 to $75 per acre, depending upon the kind used. At least 300 gallons of oil per acre must be on hand to begin with and this will cost from $9 to $20. Distributing tanks and storage tanks will add to the expense according to size and kind. Buckets, torches, etc., do not add much to the expense.



ORIENTAL PLANE SHADE TREES IN FULL FOLIAGE WHEN PHOTOGRAPHED NOV. 1, 1913.

Coal heaters cost from $20 to $30 per acre, and since the coal may be dumped on the ground there is no expense for storage. Coal may be distributed in piles in the orchard and the heaters refilled from these without more equipment than ordinary baskets and shovels.

It is better to have an oversupply than an undersupply of equipment, as failure to heat at a critical time causes all expense for that year to go for naught.



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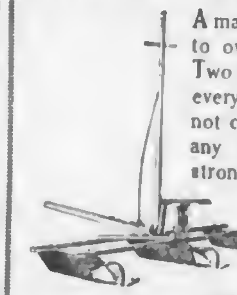

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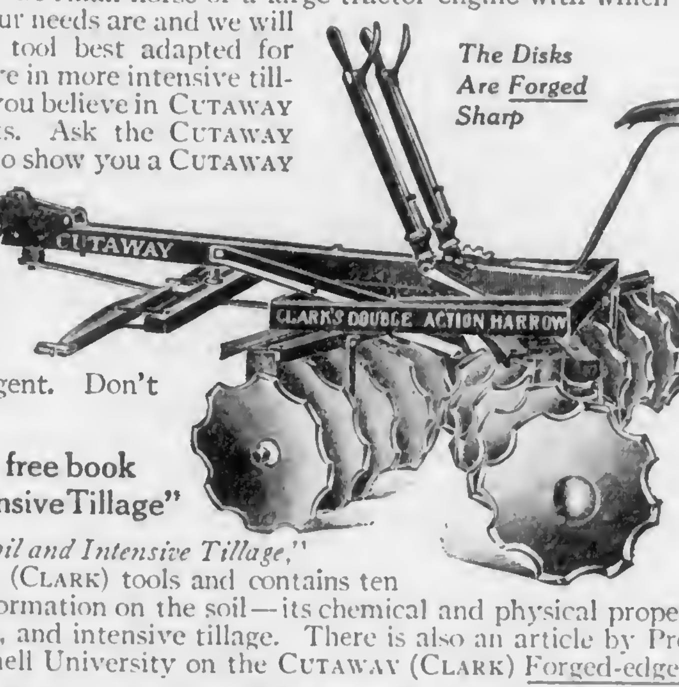

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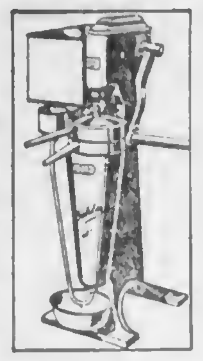

Patterned after the great world spinning on its axis, the revolving bowl of the TUBULAR has no fixed shaft and no fixed bearing. It is suspended by a flexible steel spindle, its weight being borne by a resilient ball bearing, permitting the bowl to run practically without rocking, with ease, smoothness and precision. Increases the centrifugal force without increasing the speed. The TUBULAR skims close, is easily and quickly cleaned, is built sturdily in all of its few parts. All gears are enclosed. It is constructed to afford a lifetime of durability and consumes little oil. Its suspension is natural and is not eccentric to its center of gravity.

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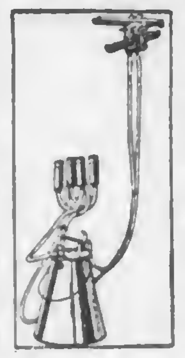

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Ayrshires Our cows made 23022 lbs. 4 per cent milk in one year. Our herd average is 11868 lbs.
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Holstein Friesian Cattle. Royal breeding. Get A. R. O. bull calves. Write
HOME FARM, Center Valley, Pa

Improvement of Permanent Pastures.---No. IV.

By JOHN H. REISNER, Cornell University.

The Pasture Grasses

Let us consider only those grasses, a combination of which will give the qualities essential for a good pasture, which are (1) quick green growth in spring; (2) a large production of green matter; (3) feed which is palatable, nutritious and digestible; (4) continuous supply of pasturage thruout the season; (5) a turf that will resist injury from tramping and overgrazing. After considering the qualities of some of the best pasture grasses for Pennsylvania we can then determine what mixture of grasses is desirable under any given conditions. The essential qualities of this mixture are that the grasses, in addition to fulfilling the requirements of a good pasture as stated above have (1) different soil and moisture requirements; (2) have different root systems, that is occupy different strata of soil; (3) have different stooling habits and (4) have different seasons of leaf growth.

PASTURE LAND BEING RECLAIMED BY ANGORA GOATS.
The goats are a source of profit in addition to cleaning the land.

Kentucky Bluegrass.—This grass does best on well-limed soils, not prominent on wet lands as on the high elevations. Considerable growth of lower leaves; widely spreading in habits and forms dense sod under favorable conditions. It has slow growth during warmer part of summer, good growth in spring and fall; reaches maturity only after 3 or 4 years. It is Pennsylvania's most reliable and extensive pasture plant. It should be included in all seedings used for permanent pasture lands except on very poor or wet soils.

A STRETCH OF GOOD PASTURE LAND UNDER GOOD TREATMENT.

Canadian Bluegrass.—Closely resembles Kentucky bluegrass; will thrive on a poorer and drier soil than Kentucky bluegrass. It is relished by stock even after matured and becomes dry but does not produce as much herbage as the Kentucky bluegrass. On good soils it can not compete with Kentucky bluegrass. It should be included in mixtures for poor lands.

Timothy.—Does best on well-drained sweet, clay soils, but found under wide diversity of conditions. Its growth is compact. It is palatable and nutritious and rather deep rooted; fairly permanent but is crowded out by bluegrass. Should always form the basis for a pasture seeding.

Meadow Fescue.—The habit of growth of meadow fescue is similar to timothy. It does best on rich soils; does not do well on soils that are very dry or lack fertility; is nutritious. It is not widely distributed in Pennsylvania pasture. The seed is rather expensive. Should be included in mixtures to be used on rich lands.

Red Top.—Grows well on poorly drained and acid soils. Least relished of our common grasses but indispensable on wet lands. Forms dense sod; grows rapidly from seed and ready to graze in a short time. Is to wet sour lands what timothy is to well drained and sweet lands. Should be used liberally in mixtures for poor lands.

Orchard Grass.—Well drained and fertile soils necessary. Among the earliest of our pasture grasses. Habit of growth is tufted; vigorous grower. When young and tender, it is liked by cattle. Becomes tough and unpalatable if not pastured early. A good grass to include in mixture for well drained rich soils.

Red Clover.—Valuable as a pasture plant only in mixture. Must be reseeded every two or three years; adapted to well-drained and sweet soils. Deep rooted. Should always be included in a new seeding.

Alsike Clover.—Will grow under acid and wet soil conditions. Is hardier than red clover. Must be resown after a few years. Deep rooted. Should be included in all mixtures in amounts varying with soil conditions.

White Clover.—A valuable pasture plant; wants same conditions of growth as demanded by Kentucky bluegrass and grows well with the latter. Habit of growth creeping. Good green growth. Palatable and nutritious. Should be included in pasture mixtures.

Mixtures for Permanent Pastures

Mixtures For Good Soils.—The mixture given below (taken from Bulletin 280, N. Y. State College of Agriculture) is suggested for a new seeding or a reseeding. If a new seeding, the amounts can be used as they stand. If the mixture is used for reseeding, the quantities can be lessened without changing the proportion. It may even be wise to omit some of them altogether, depending upon the given conditions: Timothy, 8 to 12 pounds; Kentucky bluegrass, 4 pounds; meadow fescue, 1 to 4 pounds; orchard grass, 1 to 4 pounds; red clover, 6 pounds; alsike clover, 3 pounds; white clover, 1 to 2 pounds.

In this mixture, for the first two or three years timothy, orchard grass, red and alsike clover will furnish most of the green pasturage. Eventually Kentucky bluegrass, meadow fescue and white clover will furnish most of it. If the soil is inclined to be wet, 4 pounds of red top can be substituted for the orchard grass.

Mixture For Poor Soil.—This mixture will differ from the one above by the omission of the Kentucky bluegrass, the meadow fescue, and the orchard grass,. Redtop and Canadian bluegrass are substituted in order to meet the changed soil conditions: Timothy, 8 to 12 pounds; red top, 4 pounds; Canadian bluegrass, 4 pounds; red clover, 6 pounds; alsike, 3 pounds; white clover, 1 pound. Here again for the first few years timothy, red top, red and alsike clover will furnish the largest amounts of forage, and then, unless these grasses are reseeded, Canadian bluegrass and red top will predominate.

One word more. Do not attempt to buy these mixtures. Buy the amounts of the different seeds separately and mix them at home, yourself. It will not only be cheaper but you will also know exactly what the mixture is and what to expect from it. It would be an excellent thing to do, if the seeds purchased could be tested for purity before seeding. This could be accomplished by sending small samples of each seed to the state college of agriculture and having the test made there. It can scarcely be called good management to sow grass seed that contains a considerable amount of the seeds of weeds and other foreign plants, when such results can be obviated by having the seeds tested for their purity. A guarantee is not a certain evidence that the seeds bought contain no foreign seeds.

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Time by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

Cost since while a De Laval cream separator may cost a little more than a poor one to begin with it will last from ten to twenty years, while other separators wear out and require to be replaced in from one to five years.

Profit in more and better cream, with less labor and effort, every time milk is put through the machine, twice a day, or 730 times a year for every year the separator lasts.

Satisfaction, which is no small consideration, and can only come from knowing you have the best separator, with which you are sure you are at all times accomplishing the best possible results.

Easily proven—these are all facts capable of easy demonstration and proof to any user or intending buyer of a cream separator. Every De Laval agent is glad of a chance to prove them by a De Laval machine itself—without the slightest obligation on your part unless entirely satisfied.

If you don't know the nearest De Laval agent, simply address the nearest main office as below.

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Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. **Western orders filled from Western points.** Whether your dairy is large or small write for our handsome free catalog. **Address:**

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Jerseys—Blood of Sultana's Oxford Lad, Golden Fern's Lad, Eminent. Calves, both sexes. Fred O. W. Ruok, Allentown, Pa.

FOUR FEET TO TRAMP; ONE MOUTH TO EAT

Now in early April comes the temptation to pasture bare meadows and permanent pastures. Damage to the land is positive and great, with little or no real benefit to the restless stock other than that of a little exercise that would be just as beneficial if secured in an open field or wood lot. Moreover, the scant and frozen grass is often actually detrimental to the health and production of the dairy cow. The amount of injurious tramping and packing of wet soils by cattle in the spring season is almost beyond estimate. In fact, almost every property of a productive soil is, figuratively speaking, insulted. Yet in a 17-mile ride recently cattle were seen tramping over semi-snow covered fields where the bare spots evinced about as much real pasture as the face of a 15-year-old boy demonstrates the need of a razor.

About five cents worth of hay and seven cents worth of corn ensilage will supply the wholesome roughage for each cow for 24 hours, and after eating this the animals can lie down and rest. Another saving in keeping the cattle confined to a more limited space for each 24 hours is that the greater part of the manure can be saved and utilized to make still more fertile the acres of the farm. The excrement of a well-nourished dairy cow should, if properly conserved and applied to the soil, be worth each day the outlay for ensilage,—seven cents.—D. H. Watts, Clearfield Co., Pa.

COW RATION

Kindly give me a proper ration for a family cow. I have but the one cow. She came fresh Mar. 22. She gives milk from but three teats, having lost the other last year. The blind quarter is now very hard.—A. D., Bristol, Pa.

As you have but the one cow we assume that you have no silage and not a large variety of home-grown feeds. If you buy hay, get as good quality clover as possible, and alfalfa hay will be still better if available at a reasonable price. A good grain ration may be made up of 5 parts corn meal, 1½ parts gluten feed and 1 part cottonseed meal, by weight. Start feeding about 6 pounds of this mixture, with all the roughage the cow will clean up per day. Increase gradually as long as the cow continues to increase in production of milk. An occasional feeding of roots or even small potatoes or potato parings from the kitchen will benefit the cow.

If you have use for all the milk a good cow will produce or have a market for surplus milk it will likely pay you to dispose of this cow and buy another with four good teats and normal production. Very few three-teated cows have any place in the dairy except as breeders, and a three-teater is equally unprofitable when kept alone. From your description of the case we judge that there is little likelihood of the other quarter of udder ever being restored.

Mock Silage.—The Vermont Station has been making some experiments with mock silage made from dry corn fodder. Three tons of water were added to 8 tons of shredded fodder. Five days later 2.5 tons more water were added, in another 3 days 4 tons more, a week later 2 tons, and daily waterings during the following week aggregating about 1,500 pounds. The final product contained about 25 percent of dry matter.

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I'll let you try my New Improved Galloway Sanitary any way you wish. I'll send you one of my wonderful new separators, size you want, right to your farm for 30, 60 or 90 days' trial absolutely free. I want you to test it out every way you can think of. Compare it with any other machine that you know of, no matter what the price. If anybody else is trying to sell you a separater, make them let you take their machine and set it right up by the side of mine. Compare them at every point—easy running, easy cleaning, close skimming, mechanical construction, sanitary features, in any way you can think of and then keep the machine that suits you best.

If you think that there is any other separator in the world at any price that you would rather have than the Galloway, after you have given it a good, fair test, ship it right back to me at my expense. I'll agree right now to pay all the freight both ways so you won't be out a penny or under the slightest obligation if you decide not to keep the separator after having had the free trial. If you decide to keep it, I'll guarantee to save you from $30 to $50 besides giving you a separator that absolutely has no equal in the world at any price. Then on top of this remarkable offer, remember my New Galloway Sanitary is backed by a

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and calendar of pure-bred poultry for 1914, large, many pages of poultry facts, different breeds in natural colors, 70 varieties illustrated and described. Incubators and brooders, low price of stock and eggs for hatching. A perfect guide to all poultry raisers. Send 10c for this noted book.
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Poultry

IDEAS HELP SELL POULTRY PRODUCTS

A Kansas man was dining in Chicago with a well-to-do friend. Having always been a raiser and fancier of poultry, as well as having a good appetite for a well-raised and properly cooked bird, he ordered half of a milk-fed chicken. It was delicious. Summoning the head waiter, he learned that it had been shipped by a firm in Topeka and had been raised on a farm within fifty miles of his home. The host paid the bill, $1.50 for half, or $3 for the entire chicken. The farmer had been paid twelve cents a pound for the chicken, which thus brought him only thirty-five to fifty cents.

It was not the expense of shipping or handling the chicken that made it cost so much in Chicago, nor was it altogether the cooking and serving that made the price so high, altho the hotel made a good profit. The point is, the Topeka firm has a reputation for fine poultry and the hotels pay a big price for it. This firm has established a market, and the wealthy class is willing to pay for the goods with the reputation. There are poultrymen the country over, who are getting common prices because they do not go after the right kind of trade. It makes more work but that is only a detail compared with the increased profits.

In building up a poultry market, there are four outlets thru which the high-priced product passes: High-class hotels, good restaurants, country clubs, or fashionable clubs for that matter, and wealthy families in search of something extraordinarily fine. To be able to sell them poultry products one must have something to convince prospective customers that his stock is better than the ordinary, or, better still, better than the best that is being put out. Once a foothold is gained, the producer must keep it up to the standard and always be on the lookout for a chance to improve it.

One man who was trying to start went to the head of the purchasing department in one of the leading hotels of a large city and said: "Here are some eggs that are better than the ordinary. Take them, try them out, and tell me what you think of them." They were better. He had graded them perfectly as to the size and color of the shell. One was exactly the same as the other from all outward appearances, and they had been kept perfectly. They were put up in neat cartons with the trade name on them and the goods had individuality. The hotel man reported the eggs of extra quality, and the producer, who had a contract in his pocket, all ready to be signed, agreed to furnish all the eggs the hotel needed for three months at four cents more on the dozen than the market price. In less than three years he was furnishing all the hotels with eggs and dressed fowls, at ten to fourteen cents more on the dozen or pound than the rest were getting. The hotels never objected: they were getting products that they could give to their guests without fear of complaint.

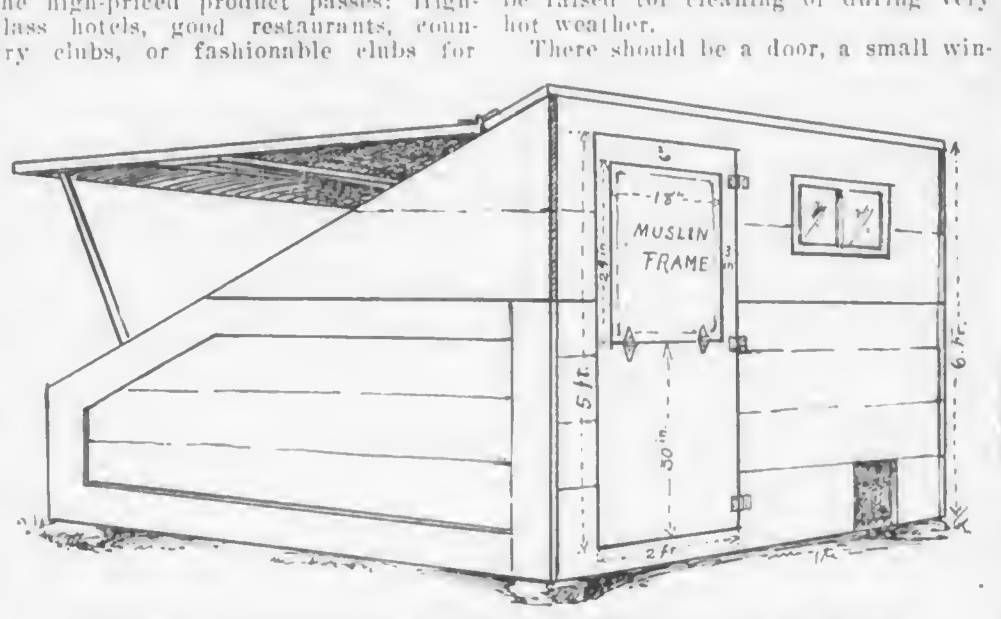
In naming the products, give something distinctive; even trade names for the various grades of the same product are useful when putting them before the public. One eastern poultry raiser had a catch phrase on all his packages and cartons, proclaiming that his chickens ate nothing but grain. It brought him trade, because some people hesitated about eating chickens which fed on filth.

There are ways of boning that make chickens sell better. These really are not much trouble if studied a little bit. Pamphlets have been put out showing exactly how it is done and how the fowls look when dressed in this way. A fact that should not be overlooked is that eggs are better if not fertilized. The reason is obvious. The fertilized egg will keep on germinating in a temperature as low as seventy degrees. The result is a small red spot. Altho perfectly good, many fastidious persons will regard them as unfit.

In any industry the individual who puts up a superior product, maintains his reputation for that product, and then uses a little enterprise in finding a market, is the profit maker.

POULTRY HOUSES FROM PIANO BOXES

Can you outline a method for utilizing old piano boxes as poultry houses; also mention a breed of fowls suitable for the production of broilers.—W. J. R., Sugar Grove, Pa. Every farm needs a few small portable poultry houses which may be used for a small breeding pen or which may be equipped with portable hovers or small brood coops and used for rearing chickens. Piano boxes may be used to good advantage in the contruction of such houses. A good method is to lay a box flat on its back and remove the entire top. Build up the sides and front, as shown in the accompanying sketch, making the front about 6 feet high. The back will be approximately 2 feet high. Hinge the top or roof at the front so that it can be raised for cleaning or during very hot weather.



PIANO BOX UTILIZED FOR CONSTRUCTION OF PORTABLE POULTRY HOUSE.

There should be a door, a small window, and a small door for fowls in the front. The door should be approximately 2 feet wide and 5 feet high. A window for ventilation should be placed in the upper part of the door. This window, 18 by 24 inches in size, equipped with a muslin covered frame hinged at the bottom to swing in and down, will provide ample ventilation for the house. This opening should be covered with fine mesh wire to keep sparrows out and fowls in when the muslin curtain is open. A four-light 8 by 10 inch glass window placed in the front will provide plenty of light. The chick door should be about 15 inches square. Cover the roof and sides with a good grade of roofing paper. The materials for this house should not cost more than $5 or $6.

This house is large enough to accommodate from 60 to 75 chicks. If hens are used for brooding, each hen should be confined to a small pen in the back of the house. Give each hen from 15 to 20 chicks depending upon the weather. As soon as the chicks are weaned, remove the hens and indoor pens and allow the chicks to run together in one flock. A good portable hover will satisfactorily care for 60 to 75 chicks.

A house of this size and type may be used for a small breeding pen of 6 to 8 fowls.

Avoid yarding fowls wherever possible. Move the house to a new location on the farm every few weeks and give the fowls or chicks free range. If this is not possible, provide two yards as large as convenient and allow the fowls to run for two weeks in one and then for two weeks in the other.

One of the American breeds—Plymouth Rock, Wyandotte, Rhode Island Red—will be advisable for the production of broilers. The question of breed is not of great importance. More depends upon the breeding and the care and management of the fowls than upon the breed.—Prof. M. C. Kilpatrick, State College, Pa.

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Tells why chicks die
J. C. Reefer, the poultry expert of 1605 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every batch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books

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Send 15 cents in stamps for same.
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Live Stock

SKIM MILK FOR PIGS AND POULTRY

Will you kindly tell us something of the food value of skim milk for pigs and for chickens? L. S. D., Bridgeton, N. J.

There have been many experiments to determine the feeding value of skim milk for pigs. All of these have shown it to be of high value when fed in connection with grain. Trials at Wisconsin experiment station showed separator skim milk to have an actual feeding value for hogs of about one-fifth that of an equal weight of corn or mixed grain meal. That is, when properly mixed with other concentrates, from 500 to 600 pounds of separator skim milk had a feeding value for pigs equal to 100 pounds of corn meal or mixed meal. Best results were obtained when not over 300 pounds of skim milk were fed with 100 pounds of corn meal. Investigations have shown that when skim milk is fed in the above proportions with corn its feeding value is somewhere near 25 cents per 100 pounds as compared with corn at 60 cents per bushel.

Two rules have been laid down for determining the money value of skim milk for fattening hogs. The Hoard rule is as follows: To find the value of 100 pounds of skim milk when fed alone, multiply the market price of live hogs in cents per pound by 5; if fed in combination with corn, multiply by 6. Thus, with live hogs selling at 9½ cents per pound, the skim milk fed alone would be worth 5 times 9½ cents or 17½ cents per cwt.; if fed in combination with corn it would be worth 57 cents per cwt.

What is known as the Gurler rule, proposed many years ago, holds that the value of 100 pounds of skim milk when fed with corn to fattening hogs is half the price per bushel. Thus, with corn at 70 cents per bushel, skim milk would be worth about 35 cents per cwt.

Some stations have found that pigs fed on sour skim milk kept in more thrifty condition than those fed sweet milk.

Milk is very generally used in feeding and fattening poultry, but we have never seen figures on its food value with this class of stock. Can some of our poultry readers supply information on this point?

DOCK THE LAMBS

Much has been said and written about the advantages and value of docking lambs while they are young. We still find many flocks where the docking of lambs is neglected and put off until it is too late. Such flocks generally have among their numbers a lot of sheep that carry long tails, the wool of which is usually filled with manure and filth. Such sheep detract from the appearance of the flock and to a prospective buyer or visitor it indicates carlessness and poor management. Such sheep are also usually less thrifty, will not develop as well and will be less profitable to the grower than a flock where all have been docked and neatly trimmed.

Lambs that have not been docked will gather on their tails, especially during the fall and winter, all manner of refuse and filth. The tails will drag in the snow during the winter and become laden with water and ice. The tails of sheep left undocked are never dry and the accumulation of manure adds several pounds of useless weight for the sheep to carry around. Such lambs, when put in the feed lot, are always in a poorer condition and do not make as good use of the feed consumed as those that are docked. If undocked lambs are kept in the flock for breeders they are less desirable because of the difficulty in getting the ewes bred. During the spring and summer the tails are one of the most inviting breeding places for animal parasites and cause the flock master no end of trouble.

Docking lambs is a comparatively simple operation and should be performed while the lambs are young. The best time for this is when the lambs are from two to four weeks old. A sharp knife, pinchers or chisel and wooden block are some of the simplest implements to be used. The operation can be performed by one person, but it is more convenient and the job can be completed in less time when two do the work. One person can hold the lamb while the other removes the tail. In cutting the tail it is well to push the skin toward the body so that there is a surplus to cover the end of the tail. Cut the tail at about an inch from the body and try to strike the joint.

During early spring it is not necessary to disinfect the place where the tail has been cut. During warm weather, when there is more danger from flies, it is well to disinfect the stump of the tail with a weak solution of carbolic acid or some coal-tar dip. During early spring it is important that the lambs have a dry place so as to keep them from getting cold. It is well to do this work some day when the sun shines and the prospects are good for a warm day.

It may seem like a big job and considerable trouble to dock lambs. It is one of the small jobs however, that goes to make the sheep business a success and certainly means a better price for lambs when they go on the market in the fall, to say nothing of the inconvenience caused when breeding undocked ewes and also handling them in the feed lot.—Prof. W. H. Tomhave, Pennsylvania State College.

"ON THE SAFE SIDE." TWO-YEAR-OLD CARRIE COOKSON SWICKARD FEEDING THE PIGGIES.

ROMNEY SHEEP

A very interesting little booklet descriptive of the Romney sheep has just been issued by the American Romney Breeders' Association. As is well known among sheep men the Romney breed combines characteristics of hardiness, vigor, early fattening and heavy fleece which promise to make it of especial value to certain large areas in this country. At present there is a demand for Romney rams for use in the range flocks of the West that is satisfied only by large importations from England and New Zealand. There would seem to be a promising future for the breed in the East, not only in development of breeding stock but for mutton and wool as well. The booklet is for general distribution and may be secured by addressing Secretary, Jos. E. Wing, Mechanicsburg, O.

STALLION LICENSES IN PENNSYLVANIA

Circular No. 27 of the Pennsylvania Live Stock Sanitary Board is a 92-page bulletin giving satistics on stallion registration in the state. There has been steady increase in the number of registrations of stallions since 1908, with the number of unregistered animals licensed remaining about the same. The total number of licenses issued in 1912 was 2,344, of which 954 were registered and 1,390 unregistered.

MORE MONEY EASIER AND FASTER WORK
You lose $1.00 on every six sheep you shear in the old way. The Stewart gets a length and quality of wool that brings the highest price. Extra profits soon pay for it. The Stewart has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of the latest improved Stewart pattern. Its price complete, including 4 combs and 4 cutters of the celebrated Stewart quality is $11.50.
STEWART'S No 9 BALL BEARING SHEARING MACHINE PRICE $11.50
gets all the wool and takes it off quickly and smoothly in one unbroken blanket. To shear with the Stewart Machine seems like play to those who have labored with hand shears in the old, hard, sweaty way. You don't have the same swollen aching wrists. You don't scar and disfigure your sheep with uneven shearing and spoil the wool with second cuts like you used to do. Get one from your dealer, or send us $2.00 and we will ship C. O. D. for balance. Money back if you are not well pleased.

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Philadelphia, Pa., April 4, 1914.

Rich Lancaster A report recently issued by the government census bureau has raised the old question as to which is the richest and most productive of the 2,950 counties of the country. The report places Los Angeles County, California, first with a total production value of $14,720,900; Lancaster Co., Pa., second with $13,059,600 and McLean County, Ill., third with $12,811,500. These valuations are on crop production alone and do not include live stock or live stock products. The above totals are sub-divided for each of the three counties as follows:

Los Angeles County.—Cereals, $806,507; other grains and seeds, $218,428; hay and forage, $3,430,698; vegetables, $1,255,093; fruits and nuts, $6,731,532; all other crops, $2,278,626. Total, $14,720,884.

Lancaster County.—Cereals, $5,459,810; other grains and seeds, $5,702; hay and forage, $2,287,361; vegetables, $1,137,034; fruits and nuts, $396,698; all other crops, $3,772,983. Total, $13,059,588.

McLean County. Cereal, $11,480,655; other grains and seeds, $8,714; hay and forage, $694,684; vegetables, $270,661; fruits and nuts, $121,062; all other crops, $235,730. Total, $12,811,506.

These figures represent the farm value of all crops produced. It will be noted that Los Angeles county has by far the largest return from fruits and nuts which are marketed in finished form. Lancaster and McLean counties have largest values in cereals (including corn) and hay and forage crops, which are marketed largely thru livestock as beef, pork and dairy products. While adding such by-products to crop totals multiplies production by duplication, it is necessary to take them into consideration to arrive at a fair estimate of money return from crops produced. The figures on live stock products for the three counties for 1909 are given as follows:

Los Angeles County.—Receipts from dairy products, $1,362,257; from poultry and eggs, $699,807; honey and wax produced, $93,569; wool and mohair produced, $32,366; from sales of animals, $710,569. Total, $2,898,568.

Lancaster County.—Receipts from dairy products, $2,212,252; from poultry and eggs, $1,219,989; honey and wax produced, $10,673; wool and mohair produced, $3,553; from sales of animals, $2,790,333. Total, $6,236,800.

McLean County. — Receipts from dairy products, $335,353; from poultry and eggs, $276,924; honey and wax produced, $1,009; wool and mohair produced, $23,535; from sales of animals, $4,144,602. Total, $4,781,423.

It will be noted that from this source of revenue Lancaster County is far in the lead. Other statistics on the agricultural phases of the three counties show that Los Angeles and McLean counties have larger, more highly capitalized farms, the former worked under intensive methods in the production of fruit, nuts and vegetables and the latter in extensive cereal and forage production. Lancaster is a county of small, moderately priced farms devoted to general farming. Census statistics on these phases are as follows:

Los Angeles County.—Total area in improved land 418,998 acres; total number of farms, 7,919; size of average farm, 95.7 acres, valued at $237.94 per acre. All farm property in the county is valued at $199,998,200, divided as follows: Land $180,354,798; buildings, $11,798,273; implements and machinery, $2,462,387; domestic animals, poultry and bees, $5,382,742. Average value of all property per farm, $25,255.

Lancaster County.—Total area of improved land, 472,795 acres; total number of farms, 10,835; size of average farm, 50.8 acres, valued at $69.90 per acre. All farm property in county is valued at $84,426,907, divided as follows: Land, $38,477,280; buildings, $32,808,583; implements and machinery, $4,716,136; domestic animals, poultry and bees, $8,424,908. Average value of all property per farm $7,792.

McLean County.—Total area improved land, 703,695 acres; total number of farms, 4,500; size of average farm, 162.9 acres, valued at $171.85 per acre. All farm property in the county is valued at $147,846,611, divided as follows: Land, $125,993,902; buildings, $11,430,312; implements and machinery, $2,073,574; domestic animals, poultry and bees, $8,348,823. Average value of all property per farm, $32,855.

These figures might form the basis of much comparative calculation, but we wish merely to point out the comparative earnings upon money invested. Good farming like good business is measured by the return from capital invested. Unfortunately we do not have the net returns, so must use the gross returns upon crops produced as given in the census report. Upon this basis it will be observed that Los Angeles County made a total return of $14,720,884 on a total farm valuation of $199,998,200, or a gross earning on investment of about 7.3 percent. Lancaster County made a total return of $13,059,588 on a total farm valuation of $84,426,907, or a gross earning on investment of about 15.4 percent. McLean County made a total return of $12,811,506 on a total farm valuation of $147,846,611, or a gross earring of 8.6 percent.

Farm Wages Government reports indicate that wages of farm laborers have increased more rapidly in the last 20 years than those for city workmen. During the last year the pay of the farm hand increased 2½ percent. The increase has been 11 percent in the past four years and 36 percent since 1902. Census reports indicate that in 1909 the amount of wages paid to farm laborers was $651,611,287, or almost double the cost in 1899, which was $357,391,930. Considerable increases in this item of expense are indicated since 1909. It is an established fact that along with this increase in the amount of wages paid there has been little enhancement in the profits from farm produce to the farmer and greater increase in the cost of land, production and marketing. While wages increased 37 percent from 1900 to 1910, farm land values nearly doubled, showing that in the "distribution of the proceeds from farming operations a larger proportion now goes to capital account and less to labor account than formerly; the interest rate of return on the capitalized value of land, however, is probably less than 25 or 30 years ago." From 1902 to 1912 the average wage rates of farm labor without board in the United States increased from $22.12 to $25.98 per month, or 33.7 percent. At the average rates of wages for farm labor without board per month in the United State (using $29.58 of 1912) and the average prices of farm products at the farm in 1913 such figures as 43 bushels of corn, 37 bushels of wheat, 43 bushels of potatoes, 101 pounds of butter, 90 dozen of eggs or 259 pounds of chickens are given as representing the amount necessary to pay a month's wages in 1913. While it is in a way surprising, statistics are mute evidence to the fact that those out of employment turn to farm work only as a last resort and this in the face of the large increase in the wage of farm laborers.

Commission Merchants The article on the first page of this issue is the first of a series giving the experiences of a Pennsylvania farmer and produce shipper with commission merchants in a number of eastern cities. The methods described in this first article were used in securing the facts that will be given in the remaining numbers in the series. The author did what few farmers can afford to do in making his various investigations. His summary of what he learned of marketing methods is mighty interesting reading. But this fact in itself is not sufficient reason for writing or publishing these articles. Neither the author nor ourselves have any desire to increase the unthinking, purposeless prejudice against the so-called middlemen who stand between the producers and consumers of farm products. Our only purpose in presenting this matter to our readers is the hope that it may lead to the development of needed reforms. It is not to be inferred that the practices here described are used by all commission men or that all middlemen are dishonest. The series will simply give details of practices that have been used, and every farmer who has shipped goods knows that these irregularities occur frequently enough to make the problem of efficient remedy an important one to both producers and consumers. An effort was made in the last session of the Pennsylvania legislature to pass a law requiring all middlemen to operate under a state license and provide limited state regulation. The effort failed largely because of the indifference of the farmers, and lack of support among those who should be most interested. It has not yet been determined that the plan proposed at that time would have proved efficient. Perhaps a better plan may be developed for consideration at this next session. It is a significant fact that the entire defense of the commission men before the legislative hearings on the bill two years ago was based upon the claim that the shippers were dishonest in the packing and grading of their goods, and that a remedial law, to be just to both sides, should enforce honesty on both sides. Every honest shipper will resent this charge just as every honest commission man will resent the charge of irregularity in his business. It would seem wiser to admit faults on both sides, and seek the remedy which will correct faults in both the shipper and the dealer. The final solution presents a problem for the serious consideration of farmers' clubs and all agricultural leaders.

STATE CAPITAL NEWS

Neglect Is Shown.—According to first returns made to the bureau of statistics few farms in the State can be classed as abandoned, altho a number of farms are badly neglected. Some of these farms are in such a run down condition that it will take much money to restore them. The state will suggest to the owners of such farms that they be used for pasturage. Reports show that in sections remote from railroads some farms have been found in run down condition.

The Bounty Act.—The question as to whether counties can be made to pay for the scalps of noxious animals and birds under the act making rewards for their killing regardless of the fact whether the legislature makes an appropriation for reimbursement or not has been settled by an opinion from the attorney general's department. It is held that counties are liable and that they must meet the claims made by killers of weasels, etc. The whole question comes out of half-baked legislation in the session of 1913, where it was provided that bounties should be paid for scalps of certain animals, one half of the income from hunters' licenses to be applied for reimbursement of counties; but the legislature failed to make the specific appropriation required for the purpose with the result that half of about $280,000 received from hunters' licenses is lying in the State Treasury. A situation similar to automobile license law.

Farm Counsellors.—The value of the farm advisors service which was inaugurated by the State last year was demonstrated a few days ago when the requests for the services of these counsellors were laid before them at the spring conference. Each advisor reported numerous requests for advice and in several instances letters reporting the manner in which suggestions had worked out or requesting further advice. The soil and drainage advisors appeared to have many requests.

About 400 farms will have to be visited in reply to applications now on hand.

Consolidation Of Schools.—A subject being given considerable attention by the State educational authorities at present, which will be laid before many rural school district boards in the next few days is the consolidation of schools. It is contended that the cost of transporting pupils to a centrally located, well equipped and adequate school will be only slightly in excess of the cost of separate smaller schools and that educational advantages reaped will be greater because of the grading and employment of more experienced teachers. The transportation item is the biggest one but that, it is claimed would be compensated for by the prevention of exposure to weather conditions. It is also contended that it is conducive to longer terms. Another claim is that by consolidating schools and transporting the pupils the farm will be made the ideal place to bring up children obviating the necessity of moving to towns for educational opportunities. Certain it is that it would be better for the next generation if the children in rural districts were provided with improved schools, grading and transportation facilities.

State Using Its Own.—The State has shown some thrift in employing students from State College to look after trees in Capitol Park. Heretofore hundreds of dollars were paid to experts in tree surgery, but a working arrangement has been consummated between the college and state officials in this matter which might be followed advantageously in other lines of state activity.—Hamilton, Harrisburg, March 30, 1914.

NEW JERSEY FARM NEWS

State College News.—More th [illegible] students received certificates at the recent annual commencement of the short courses in agriculture. This is the largest class that has ever been graduated from the short course. Prof. Melvin T. Blake delivered a lecture on "Market Gardening" for the benefit of the people of New Brunswick. The graduating class of the poultry department visited the world famous poultry farms at Freneau where a careful examination was made of the brooding system, incubator cellars and laying houses.

The Seed Potato Question.—The sole object of the New Jersey Potato Association is to encourage and stimulate in every possible way the production of good seed potatoes, free from disease and true to name. The association has no seed to sell and is not now and has no intention of competing with any individual or firm in the State. Prof. M. T. Cook, of the State College, is president, and, largely because of this connection, he has been able to emphasize to northern seed growers the feelings of New Jersey growers in regard to the seed question. Prof. Cook says the Maine authorities have taken prompt and vigorous action to prevent the spread of the powdery scab which exists in portions of the State near the Canadian border, and in the northern section of Aroostook county and that they have an inspection service for seed potatoes. The Maine railroads have agreed not to accept seed potatoes for shipment unless they have been certified by the proper authorities. New Jersey growers should be very careful about accepting Maine potatoes unless they have been certified as free from powdery scab by the proper authorities. As a main-crop potato, the Clyde is coming into favor as a variety a little earlier than the Green Mountain.

The Mercer County Potato Association.—Fred F. Gardner has been elected president of this organization. The members have decided in the future to sell their potatoes thru the Monmouth county farmers' exchange, after having first been graded and sorted. These potatoes will be sold under the trade mark of the Mercer County Potato Growers' Association.

Less Tomato Acreage.—As a result of R. V. Crine's recent trip to the west and his attendance at the convention of tomato packers in Baltimore the Crine Packing And Seed Company, of Morganville, will this year contract for about one-half its usual acreage in tomatoes. Other packers are said to be doing likewise. The company will pay $10 per ton for tomatoes this year and has already begun to sign up contracts with farmers to grow them. It was the opinion of the packers at the Baltimore convention that there were entirely too many tomatoes being packed and that another crop like last year might prove disastrous. Mr. Crine is also making contracts for furnishing tomato seed for the 1915 crop with the large seed houses and the number of acres the company will plant this year will depend largely upon the contracts made at this season of the year.

Bills Passed State Senate.—Several bills have just passed the State Senate and all of them will very likely become laws. No. 274 makes the sale of agricultural products by weight to conform with the weights and measures act. The Edge bill requires every railroad to protect all its grade crossings within a period of six months. The Egan bill provides State aid in the construction, operation or repair of bridges taken over by counties under the Road Improvement Act of 1913. Senator Gaunt of Gloucester county, Master of the State grange, has also succeeded in having passed his bill exempting from the provisions of the employers' liability act, farm laborers and domestic servants.

Fire Wardens Meet.—The annual meeting of the South Jersey district fire wardens was held at Millville. State Forester Gaskill told the fire wardens the State could not expect investors to purchase land and develop it for farming if they were not assured protection from forest fires. It was not the purpose of the Forestry Commission, he explained, to preserve all the woodland as it is, as some of the tracts were far too valuable for agricultural purposes. Mr. Gaskill urged the wardens to make an effort to increase the growing of shade trees.—H.

NEW YORK LETTER

Eleventh Hour Legislation. — Bills have been rushed thru by the score during the last days and thousands of dollars have been appropriated. Among the bills is one authorizing the senate to carry on an investigation of the highway department, brought about by the action taken by the Assembly in appointing its investigation committee and asking $40,000 for its expenses; which the senate leaders agreed to pass if the Assembly would pass a bill creating a senate committee to investigate the highways. The primary bills died in committee. Under an emergency message both houses passed the Fowley bill appropriating $10,000,000 for highway improvement and maintenance. A state employment bureau has been created in the department of labor. The Alder bill prohibiting the storage of foods "apparently" impure, and making it a misdemeanor for a person or company to offer impure food for storage has passed both houses and goes to the governor for his signature.

Another bill likely to pass creates a department of foods and markets, in charge of a commissioner to be appointed by the governor for a term of five years at a salary of $6,000. This commission may investigate cost of food stuffs, manner of marketing, provide for the establishment of public markets and make rules governing the sale of food stuffs.

Boys Back To The Farm.—New York city has bought a farm of 600 acres in Orange County to give the boys from the reformatory on Hart's Island some experience in farm life. Extensive buildings will be erected and farm and gardening experts will instruct the boys in the culture of all kinds of crops. Particular stress is laid on gardening, as vegetables find ready market in the city.

Good Showing.—The annual report of the Blockville creamery shows that it made 64,987 pounds of butter at an average selling price of 31 cents. The entire receipts of the creamery for the year were $19,573 and the expense of making was $1,787.33. The amount paid to patrons was $17,785.99.

Commissioner Huson.—The governor has re-appointed C. J. Huson as commissioner of agriculture and the legislature has raised his salary from $6,000 to $8,000. Commissioner Huson's appointment for another term gives general satisfaction. John F. Farrell will succeed Fritz Reichmann as state superintendent of weights and measures.

State Fair Commissioner.—The reappointment of George W. Driscoll, of Syracuse, to the state fair commission is displeasing to officials of the state grange. While they have nothing against Mr. Driscoll personally, they declare that agricultural interests have not been considered in his appointment. Until last year the grange has always had a representative on this commission. This year the names of several men who were members of the grange and who would have been acceptable to them were suggested, but they were ignored. The governor has been talking about the farmer and his needs the past winter but has missed a chance to prove that he meant what he said.

Chautauqua Farm Bureau.—The executive committee of the Chautauqua Farm Bureau recently reorganized for the year. Work this season will include demonstrations in special crops, testing of seed corn and other seeds, assistance in drainage matters, etc. A market association for the county is contemplated. A permanent office for the use of the farm bureau manager and officers will be opened within the Chautauqua grounds. Jared Hewes of Stedman is president and A. M. Loomis of Jamestown is secretary.—D.

MARYLAND NOTES

Creamery Progressing.—The Creamery established January 19th at Perryman is meeting with excellent success. It is already turning out 600 pounds of butter weekly. The plant has a capacity of about 1,500 pounds a week. Over 2,500 pounds of milk daily is now coming in.

Can Company Discontinued. — The plant of the American Can Co., at Havre De Grace recently discontinued. There is a rumor that an independent can company will soon be organized.

Cooling Station at Queene Anne.—A Philadelphia dairy company is erecting a milk cooling station at Queen Anne. It will be completed in a few days, and it is anticipated that a car load of milk will be shipped daily.

New Canning Company.—The Rich Bottom Canning Company has been organized in Easton and a new cannery of fully 20,000 case capacity will be erected.

Tomato Outlook Uncertain.—The outlook for tomato growers in most sections of Eastern Shore is not promising. It is reported the jobbers are too well stocked with last year's crop and that many canners also still have large supplies on hand. Packers are holding back in making contracts for coming season.

A number of farmers last fall stored sweet potatoes, expecting much greater prices about this period. They are now eagerly disposing of them, and the best prices last week in local market was 25 cents a basket.

Bounty on Buzzards.—Talbot County farmers are working to get a bounty placed on the killing of buzzards, the great hog cholera and other disease spreading nuisance.—B.

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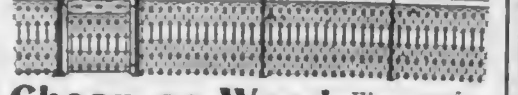

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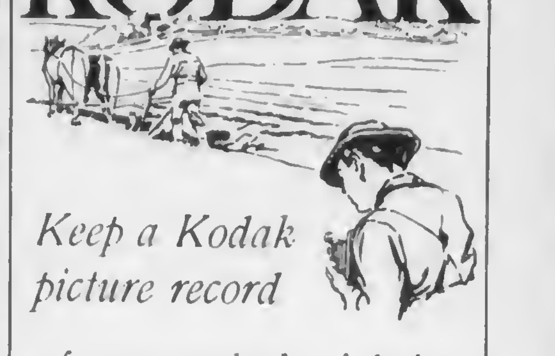

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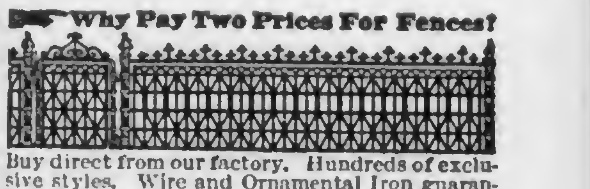

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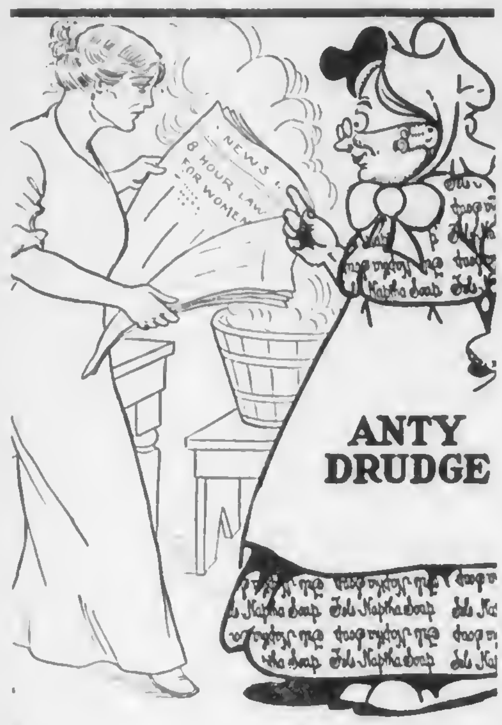

Mrs. Grumble—"I see by this paper that most of the states are passing laws to prevent women from working over eight hours a day. That applies to everybody except us, I guess. We country women can work all day and half the night and nobody cares."

Anty Drudge—"The way *you* work is enough to make anybody gloomy. But you can make your own eight-hour law if you want to. Just use Fels-Naptha Soap. It will get your work done for you in even less than eight hours every day, *even wash-day.*"

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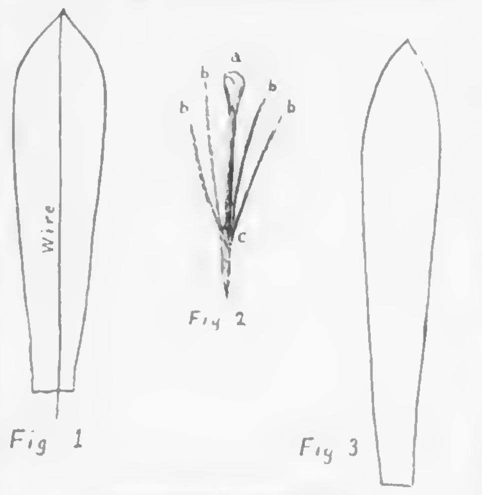
Household

SUGGESTIONS FOR EASTER DECORATIONS

The decoration of the home never ceases to be an interesting subject for all classes, and many are coming to realize and appreciate the wonderful artistic possibilities of crepe and tissue paper as a decorative medium. Making paper flowers is so simple as to be almost kindergarten work, but the skillful and original touches of the woman who "knows how" are always evident in work of this kind. The following instructions for making paper Easter lilies are most explicit and easy to follow. For ladies who are interested in church, Grange and club decoration the paper flower supplies a long felt requirement, as it combines beauty with economy such as may be had with no other material. For home decoration it is also particularly practical as it eliminates the one very serious objection to the profuse use of the natural flower, the heavy sweet perfume so nauseating to many.

In making any paper flower it is advisable to have patterns of cardboard or heavy paper cut the exact size and shape required, thus insuring a uniform size for all the petals and leaves. For these Easter lilies each petal should be 7 inches long and about one inch wide. Fig. 1 shows the shape. That they be exact in size is most essential, else the flower will not be perfect. Fold the crepe paper in as many thicknesses as can be cut thru at one operation, holding the pattern firmly, cut carefully around it. The petals and leaves are cut lengthways of the crepe.



PATTERN FOR EASTER LILY

Wire the petals, as shown in Fig. 1, with white-covered wire. This may be bought on spools containing ten yards of wire for five cents. Time and work may be saved by covering several wires with paste at one time; applying them to the petals, before they dry.

Making The Centers.—To form the pistil, attach to top of a 5-inch wire a small ball of light green crushed tissue paper (Fig. 2, a). Wind around the ball and down the wire for about 3 inches with a narrow strip of the tissue. There are four or five stamens, (Fig. 2, b, b,), which are made by rolling a 5-inch strip of green tissue paper almost to a thread. Attach these firmly to the base of the pistil (Fig. 2, c), then wind the entire center on to an 18-inch heavy stem wire.

Paste the edges of the six petals together about half way up from the base, and gather around the center, attaching securely with fine wire. Cut a strip of dark green crepe paper about 2 inches wide and 15 inches long, (cut across the grain of the crepe). Fold double to make stronger, and wind two or three times around the base of the flower to prevent the petals from slipping loose. A touch of paste may be used to make them even more secure. Holding the paper loosely in the fingers of the left hand, with the right hand turn the stem wire from you, turning round and round, thus covering the stem tightly with the paper. Twist in six or eight leaves, cut as in Fig. 3, these leaves to vary in size from 5 to 8 inches.

To open the flower, bend the wires in the petals gracefully backward with the thumb and first finger. The leaves may also be curled by drawing back of the scissors under each leaf, holding the leaf firmly against the scissors with the thumb, then pull quickly upward toward the tip of the leaf. This operation will curl the leaf most naturally outward.

Care must be taken to use very little paste, and paste which is not too moist, as it will soften the paper and make it useless.

The Easter lily makes a most beautiful table decoration, particularly when used with a profusion of smilax vines. The stems are necessarily short if used for this purpose.—Leora Tobias, New York.

Braised Beef.—Select a piece of beef weighing 3 or 4 pounds, cut off of the shoulder or under part of the round, and if possible have it at least 3 inches thick. This last is important, for if the piece of beef is too thin it will fall to pieces too readily in the cooking. Cut ½ pound salt pork into dice. If you have no way of weighing the pork, cut enough for a heaping cupful. Then cut into dice or small pieces one large potato, carrot, onion, turnip, a head of celery, and one-fourth of a small head of cabbage. If all of these vegetables are not at hand, three or four will do. Divide the cut-up vegetables and salt pork into two equal parts. Place one part into the cooking kettle, then lay the beef, which has been washed and trimmed, on these. Add 6 whole black peppers, 4 bay leaves, some parsley, sage, thyme or savory,—in fact I usually put in a little of every kind of dried herbs that I have on hand. Pour over this 2 cups of boiling water, salt to taste, cover closely and put on the stove over a fire that will just keep it simmering gently for from four to six hours. Then lift the meat carefully on to a platter, pour the vegetables around it and serve. Be careful not to let the fire get hot enough to make the contents of the kettle boil briskly or the beef will fall to pieces, and there will be beef stew instead of braised beef. This dish is nice to cook in a fireless cooker. Also it is good to have when the housewife wants to go to church Sunday morning preparing it Saturday night.—N. D. H.

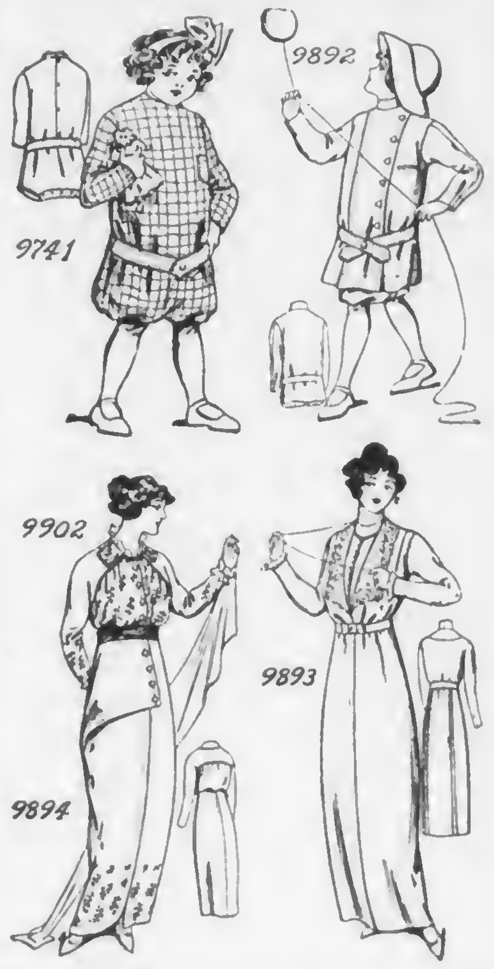
PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 214-18 So. 12th St., Philadelphia, Pa.

9741—Child's Rompers.—Cut in 4 sizes: 6 mos., 1, 2 and 3 years. It requires 2¼ yards of 36-inch material for a 3 year size. Price of pattern, 10 cents.

9892—Boy's Russian Suit.—Cut in 4 sizes: 3, 4, 5 and 6 years. It requires 3 yards of 44-inch material for a 5-year size. Price, 10 cents.

9902—9894. — Ladies' Costume. — Waist, 9902, cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches, bust measure. Skirt, 9894, cut in 6 sizes: 22, 24, 26, 28, 30 and 32 inches, waist measure. It requires 5¼ yards of 44-inch material for the entire costume in a 36-inch size. The skirt measures 1½ yard at the foot. Two separate patterns, 10 cents for each pattern.



9893—Ladies Dress for Maternity or Invalid Wear.—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 6¼ yards of 44-inch material for a 38-inch size. Price, 10 cents.

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Grange

OUR BEST CROP

In the language of our everyday life we speak of our crops as to their importance on the basis of the money value they have in business, or because they are helpful in the maintenance of a diversified system of farming. We hail King corn not only because of the tremendous values in his empire, but also because of the ability that corn has to increase and stimulate value in other lines of production. We speak of many of our crops in terms of such magnitude that we cannot comprehend the amounts indicated by the figures. We state the relative size and condition of our large commercial and industrial institutions in like terms, and refer to them as our great industries. But these are the terms of the market, the counter and the exchange.

When we get down to the terms of real life, to the things that call out the largest sacrifice, the most constant devotion and for the benefit of which we appropriate such a generous share of these products of the soil and the factory as well as the income of brawn and brain, it is not of cereals or machines, animals or plants, books or bank accounts that we think, but of the babies in the home. In the home of the poor, except where liquor has set up a false standard, the loving mother bends to the thousand daily duties and submits to the many personal sacrifices for their good. The father in the strength of his affection thinks and plans and works that his children may have every possible advantage. In the home of the wealthy so many are the luxuries lavished upon beloved children as to actually prove a barrier and a handicap in their development.

I say these are the great values in the terms of real life and we all admit them when some crucial test brings them directly to our notice but when so much of our time is taken up in the effort to maintain our position in society and to acquire the material things that love prompts as necessary to our properly conducted homes. When no sickness draws our attention to the child as an individual, when no physical deformity calls for the consideration of the child as a unit, we are too apt to be led aside from the things which in our serious moments we admit are the things worth while.

For instance, in our educational system we are too apt to look upon education as preparation for some trade or business, rather than a development of the intellectual part of a being whose future occupation is undetermined and whose destiny is eternal. If a child can be taught to think and reason logically and at the same time become expert in a particular line of work, well and good, but it must not be forgotten that a great deal of what we call technical education does not require that close application of the analytical powers of the minds as give to the brain the fullest development in the power to think and reason logically. This is the all-important requirement in an education. We cannot tell where or how the after life of the child will be worked out, but we are sure of two things, namely; that wherever he goes he will have to think matters out to a logical conclusion and determine his future course by that decision, and, as well, in all that part of his life that has to do with concerted effort with his fellows, he will also need the power of expression. If these abilities are gained the groundwork is laid for any line of work to which the future may lead.

Another instance: We are glad to see our children grow to a full development physically, and we become disturbed if we see any stagnation in that normal growth. But in relation to character, unless there is some abnormal peculiarity that concentrates our attention upon the particular need of a particular child, we are too likely to be satisfied with a growth that is slow and uneven. In the books they read they can be delighted without being filled with trash. They can enjoy with the imagination clean pictures just as fully as foul ones. They can be enthused with a story that tells the truth as fully as with one that carries a false interpretation of life.

And in their amusement, they can be instructed as well as entertained. It is an astounding commentary upon modern conception of entertainment to notice in our metropolitan press what our city cousins are satisfied with in the nature of amusement, and if the nickelodions' offerings to the list were published, it would be even worse. It is a pity that any such taste should be formed in any child. Situations can be funny without a half-covered suggestion of evil. Wit and humor can have full play without undermining faith and hope and peace of mind. There is ample variety and abundance of splendid, clean amusement offered today in the lyceum bureaus and entertainments of that character that not only delight but uplift. You go away from many of them almost in pain from excessive laughter, and as well strengthened and made better by the interwoven appeals to the best things in life. A little teamwork in each community would give our children a taste for this kind of amusement, and who can calculate the value of such an established taste to the individual who must later come in contact with the trash which so many places offer.

In another article I want to finish the argument that leads, I think, logically, to this statement that we are not giving to our children the opportunity of a full, rounded development in this generation that our material intellectual and spiritual advantages warrant. The criticisms that herein have been and which will later be made in this brief study of our greatest and best product, are not intended as finding fault but rather as suggestions as to how a community can correct some of the deficiencies in this regard.—John A. McSparran, Lancaster County, Pa.

MARYLAND GRANGE FAVORS COLLEGE APPROPRIATION

Still Pond Grange gave a reception to its Overseer and his bride on March 14. A very interesting program was given, the chief speaker being Prof. T. B. Symons of the Maryland Agricultural College. He prefaced his remarks with some helpful hints on "Domestic Science," the study of successful home-making. This was followed by a few very timely sentences on the disgraceful conditions of our country roads, and every one saw the truth in what he said.

He followed with a fervent address on behalf of our Agricultural College, and all those who thru indifference had not exactly approved of the project, are now convinced that the plans for development will fill the many needs of our farmers. His figures showed that a man owning a $5,000 farm would have only 12 cents additional taxes to pay on this $1,000,000 appropriation they are asking for. He urged the farmers not to be economical with themselves, when vast sums of money are spent each year by the legislature, of which the farmers get no benefit. These various bills are passed and the men on the farms know nothing of them, so he urged all to look out for themselves this time, and get what was due them.

The farmers from the whole county will meet later to discuss the canning situation. All are urged to bring their wives, as the Grange is to serve tea.—Evelyn Harris.

THE GRANGE FIELD

New Grange State.—Last month another grange state was organized, making 32 in all. It was the state of North Dakota. The first annual meeting was held at Bismark when 16 granges were represented and the organization perfected. National Master Wilson was present as also was Gov. L. B. Hanna, who addressed the meeting. L. D. Wiley, of Solon was elected State Master; Mrs. C. F. Schick, of Lark, lecturer and Ray McKaig, of Fort Rice, secretary. A full complement of officers was chosen.

Grange Insurance.—One of the most successful grange insurance companies in the United States is that located at Olathe, Kas. The company closed its last year on December 31, with $18,184,198 in insurance on its books. The total receipts of the company for the year were $82,441.84 and the entire operating expenses were $7,738.50. The association closed the year with $55,904.39 in its treasury.

Grange Property.—The National Grange Monthly is authority for the statement that the granges of Ohio own 171 grange halls valued at $265,000 and it is further stated that the musical instruments in these halls are worth $27,000, besides all other furniture contained. There are more than 20,000 books in the grange libraries of Ohio.

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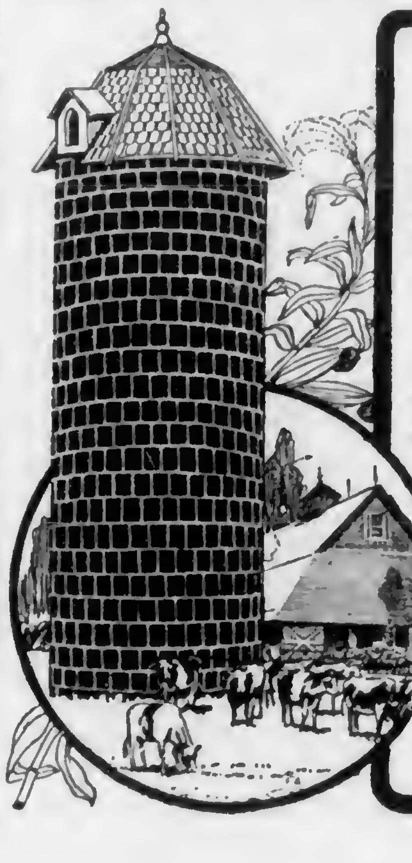

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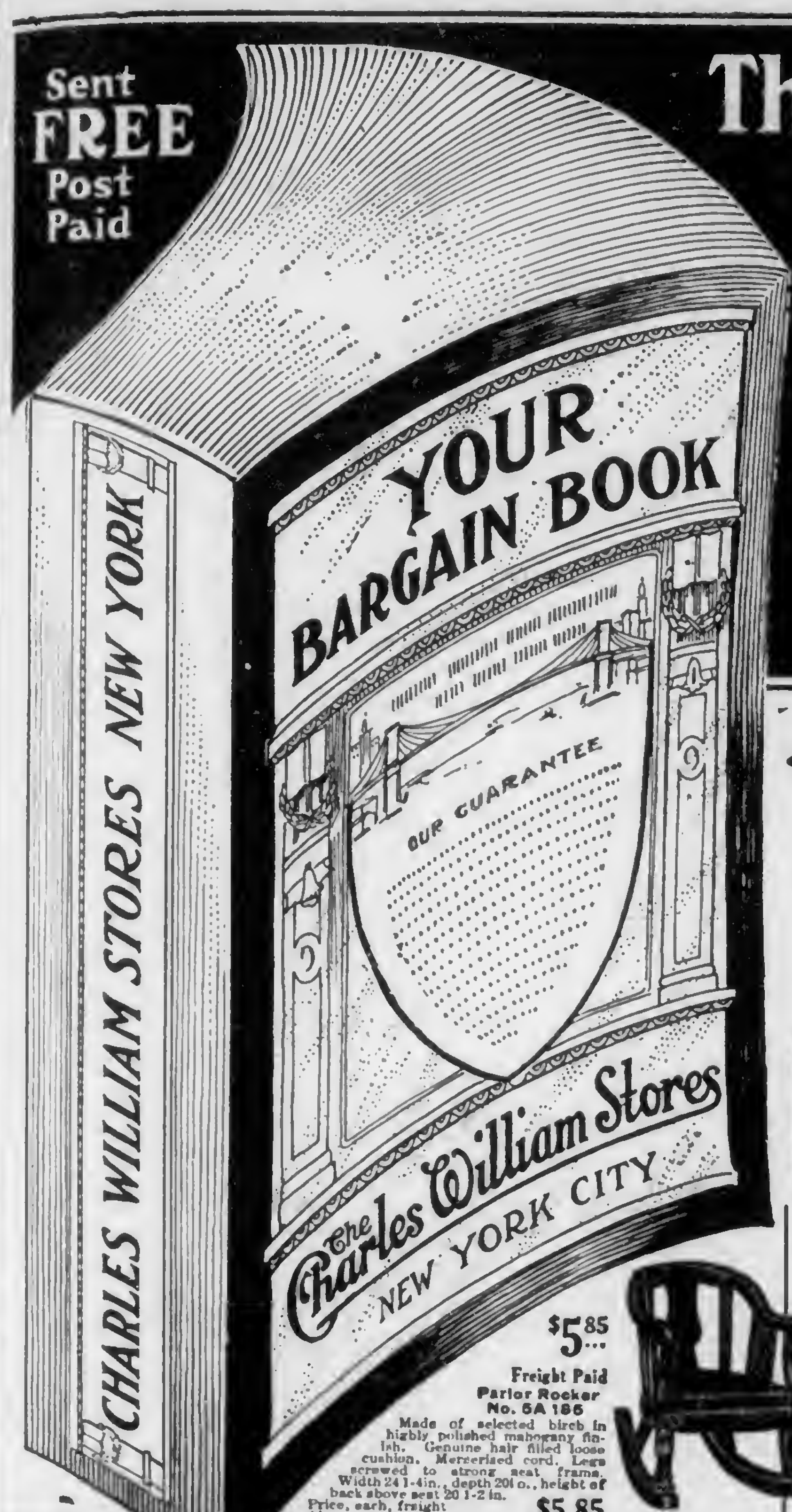

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This money saving outfit consists of one Lever Forge with 19 inch hearth, one drill with 5 tools, one steel jawed vise; one 60 lb. anvil, steel faced; one Blacksmith's Hammer; one riveting hammer; one cold cutter; one pair tongs; one hardie; one round punch. Fully guaranteed.

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXVI (concluded.)

It might have appeared, unusual in England, but it was much less so in a country where the specialization of professions is still almost unknown, and the man who can adapt himself attains ascendency, and on the morrow Winston arrived at a big wooden building beside a pine-shrouded river. It appeared falling to pieces, and the engineer looked disdainfully at some of the machinery, but, somewhat against his wishes, he sat up with his companion most of the night in a little log hotel, and orders that occasioned one of Graham's associates consternation were mailed to the city next morning. Then machines came out by the carload, and men with tools in droves. Some of them murmured mutinously when they found they were expected to do as much as their leader, who was not a tradesman, but these were forthwith sent back again, and the rest were willing to stay and earn the premium he promised them for rapid work.

Before the frost grew arctic, the building stood firm, and the hammers rang inside it night and day until when the ice had bound the dam and lead, the fires were lighted and trials under steam began. It cost more than water, but buyers with orders from the East were clamoring for flour just then. For a fortnight Winston snatched his food in mouthfuls, and scarcely closed his eyes, while Graham found him pale and almost haggard when he came down with several men from the cities in response to a telegram. For an hour they moved up and down, watching whirring belt and humming roller, and then, whitened with the dust, stood very intent and quiet while one of them dipped up a little flour from the delivery hopper. His opinions on, and dealings in, that product were famous in the land. He said nothing for several minutes, and then brushing the white dust from his hands turned with a little smile to Graham.

"We'll have some baked, but I don't know that there's much use for it. This will grade a very good first," he said. "You can book me the thousand two eighties for a beginning now."

Winston's fingers trembled, but there was a twinkle in Graham's eyes as he brought his hand down on his shoulder.

"Gentlemen," he said, "I was figuring right on this when I brought the champagne along. It was all I could do, but Imperial Tokay wouldn't be good enough to rinse this dust down with, when every speck of it that's on you means dollars by the handful rolling in."

It was a very contented and slightly hilarious party that went back to the city, but Winston sat down before a shaded lamp wih a wet rag round his head when they left him, and bent over a sheaf of drawings until his eyes grew dim. Then he once more took up a little strip of paper that Graham had given him, and leaned forward with his arms upon the table. The mill was very silent at last, for of all who had toiled in it that day one weary man alone sat awake, staring, with aching eyes, in front of him. There was, however, a little smile in them, for roseate visions floated before them. If the promise that strip of paper held out was redeemed, they might materialize, for those who had toiled and wasted their substance that the eastern peoples might be fed would that year, at least, not go without their reward. Then he stretched out his arms wearily above his head.

"It almost seems that what I have hoped for may be mine," he said. "Still, there is a good deal to be done first, and not two hours left before I begin it tomorrow."

CHAPTER XXVII

Reinstatement

A year of tireless effort and some anxiety had passed since Winston had seen the first load of flour sent to the east, when he and Graham sat talking in their Winnipeg office. The products of the St. Louis mills were already in growing demand, and Graham appeared quietly contented as he turned over the letters before him. When he laid down the last one, however, he glanced at his companion anxiously.

"We have got to fix up something soon," he said. "I have booked all the St. Louis can turn out for six months ahead, and the syndicate is read to take the business over, tho I don't quite know whether it would be wise to let them. It seems to me that milling is going to pay tolerably well for another year, and if I knew what you were wanting, it would suit me better."

"I told you I wanted thirty thousand dollars," said Winston quietly.

"You've got them," said Graham. "When the next balance comes out you'll have a good many more. The question is, what you're going to do with them now they're yours?"

Winston took out a letter from Dane and passed it across to Graham.

"I'm sorry to tell you the Colonel is getting no better," it ran. "The specialist we brought in seems to think he will never be quite himself again, and, now he has let the reins go, things are falling to pieces at Silverdale. Somebody left Atterly a pile of money, and he is going back to the old country. Carshalton is going too, and, as they can't sell out to any one we don't approve of, the rest insisted on me seeing you. I purpose starting tomorrow."

"What happened to Colonel Barrington?" asked Graham.

"His sleigh turned over," said Winston. "Horse trampled on him, and it was an hour or two before his hired man could get him under shelter!"

"You would be content to turn farmer again?"

"I think I would," said Winston. "At least, at Silverdale."

Graham made a little grimace. "Well," he said resignedly, "I guess it's human nature, but I'm thankful now and then there's nothing about me but my money that would take the eye of any young woman. I figure they're kind of useful to wake up a man so he'll stir round looking for something to offer one of them, but he's apt to find his business must go second when she has got it and him, and he has to waste on house fixings what would give a man a fair start in life. Still, it's no use talking. What have you told him?"

Winston laughed a little. "Nothing," he said. "I will let him come, and you shall have my decision when I've been to Silverdale."

It was next day when Dane arrived at Winnipeg, and Winston listened gravely to all he had to tell him.

"I have two questions to ask," he said. "Would the others be unanimous in receiving me, and does Colonel Barrington know of your mission?"

"Yes to both," said Dane. "We haven't a man there who would not hold out his hand to you, and Barrington has been worrying and talking a good deal about you lately. He seems to fancy nothing has gone right at Silverdale since you left it, and others share his opinion. The fact is, the old man is losing his grip tolerably rapidly."

"Then," said Winston quietly, "I'll go down with you, but I can make no promise until I have heard the others."

Dane smiled a little. "That is all I want. I don't know whether I told you that Maud Barrington is there. Would tomorrow suit you?"

"No," said Winston. "I will come today."

It was early next morning when they stepped out of the stove-warmed car into the stinging cold of the prairie. Fur-clad figures, showing shapeless in the creeping light, clustered about them, and Winston felt himself thumped on the shoulders by mittened hands, while Alfreton's young voice broke thru the murmurs of welcome.

"Let him alone while he's hungry," he said. It's the first time in its history they've had breakfast ready at this hour in the hotel, and it would not have been accomplished if I hadn't spent most of yesterday playing cards with the man who keeps it, and making love to the young women!"

"That's quite right," said another lad. "When he takes off his cap you'll see how one of them rewarded him, but come along, Winston. It—is—ready."

The greetings might, of course, have been expressed differently, but Winston also was not addicted to displaying all he felt, and the little ring in the lads' voices was enough for him. As they moved towards the hotel he saw that Dane was looking at him.

"Well?" said the latter, "you see they want you."

That was probably the most hilarious breakfast that had ever been held in the wooden hotel, and before it was over, three of his companions had said to Winston, "Of course you'll drive in with me!"

"Boys," he said, as they put their furs on, and his voice shook a trifle, "I can't ride in with everybody who has asked me unless you dismember me."

Finally Alfreton, who was a trifle too quick for the others, got him into his sleigh, and they swept out behind a splendid team into the frozen stillness of the prairie. The white leagues rolled behind them, the cold grew intense, but while Winston was for the most part silent, and apparently preoccupied, Alfreton talked almost incessantly, and only once looked grave. That happened when Winston asked about Colonel Barrington.

The lad shook his head. "I scarcely think he will ever take told again," he said. "You will understand me better when you see him."

They stopped a while at mid-day at an outlying farm, out Winston glanced inquiringly at Alfreton when one of the sleighs went on. The lad smiled at him.

"Yes," he said. "He is going on to tell them we have got you."

"They would have found it out in a few more hours," said Winston.

Alfreton's eyes twinkled. "No doubt they would," he said dryly. "Still, you see, somebody was offering two to one that Dane couldn't bring you, and you know we're generally keen about any kind of a wager!"

The explanation, which was not quite out of keeping with the customs of the younger men at Silverdale, did not content Winston, but he said nothing. So far his return had resembled a triumph, and waile the sincerity of the welcome had its effect on him, he shrank a little from what he fancied might be waiting him.

The creeping darkness found them still upon the waste, and the cold grew keener when the stars peeped out. Even sound seemed frozen, and the faint muffled beat of hoofs unreal and out of place in the icy stillness of the wilderness. Still, the horses knew they were nearing home, and swung into a faster pace, while the men drew fur caps down, and the robes closer round them as the draught their passage made stung them with a cold that seemed to sear the skin where there was an inch left uncovered. Now and then a clump of willows or a birch bluff flitted out of the dimness, grew a trifle blacker, and was left behind, but there was still no sign of habitation, and Alfreton, too chilled at last to speak, passed the reins to Winston, and beat his mittened hands. Winston could scarcely grasp them, for he had lived in the cities, and the cold he had been sheltered from was numbing.

For another hour they slid onwards, and then a dim blur crept out of the white waste. It rose higher, cutting more blackly against the sky, and Winston recognized with a curious little quiver the birch bluff that sheltered Silverdale Grange. Then as they swept thru the gloom of it, a row of ruddy lights blinked across the snow, and Winston felt his heart beat as he watched the homestead grow into form. He had first come there an impositor, and had left it an outcast, while now it was amid the acclamations of those who had once looked on him with suspicion he was coming back again.

(To be concluded)

New Story by Kipling.—Rudyard Kipling contributes his latest story "The Dog Harvey" to the April number of the Century Magazine. It is a delightful tale with a touch of the supernatural in it.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., March 30, 1914

Most of the butter stock was of unattractive nature and values were irregular. Egg supplies were under pretty good control and values were well maintained. Supplies of poultry were small and market ruled firm, with demand equal to the offerings. Fruit and vegetables were quiet, with ample offerings at revised prices.

Butter.—Western creamery, 28c; extras, 26@27c; firsts to seconds, 23@24c; special prints, 33@36c; near-by prints 30c.

Eggs.—Candled 25@27c doz.; extras 22c. Current receipts at $6.00 per standard case.

Poultry.—Fowls, 12½@20c; old roosters 13@14c; pigeons, 28@32c pair.

Dressed Poultry.—Western fowls 12@19c; roosters, 15c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 75@90c bu. Onions $2.50@2.75 per 100-lb bag. Peppers, $4.00@5.00 per crate. Eggplant $3.00@4.00 carrier. Lettuce $2.50@3.50 hamper. Beets 5@8c per bch. Sweet potatoes 50@75c bas. String beans $3@4 per hamper. Squash $3.50@4 per crate. Cucumbers, Florida $1.50@2.00 doz. Celery $2@2.25 crate. Cabbage, new $1.00@1.25 per hamper. Cauliflower $1.75@2.25 per ½-bbl. box.

Fruit.—Apples, $5@6.00 bbl. Pineapples, per crt. $3.00@4.00. Pears, 75@85c basket. Cranberries $12@13 bbl; lemons, $2.75 per box; grape fruit $2@3 per box; oranges, $2.50@3.00 per box.

Hay and Grain.—No. 1 hay, large bales, $18@18.50; No 1 medium $17.50@18.00 no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00; straw No. 1 new straight rye, $16.50@17.00 No. 2 do., $15@15.50; No. 1 tangled rye straw new $12@12.50; No. 2 do., $11@11.50; No. 1, wheat straw, $10@10.50; No. 1 oat straw, $10.50@11; new shelled corn No. 2 yellow 75@75½c. Wheat No. 2 red $1.00½@1.01; No. 1 Northern, $1.05½@1.06½; No. 2 white oats 46@46½; No. 3, white 44½@45c; Standard white 45½@46c.

Coffee.—Rio 7s 9c; Santos 4s 11¾c. Mild Coffee.—Cordova 12½@16½c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.15; powdered, $4.00; granulated, , $3.90; standard granulated, 3.95; crystal A, $3.90.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅝@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs, 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6⅞c; country, 6¾c; do dark, 5½c; do. cakes, 7c.

Philadelphia Retail.

Vegetables.—Onions 15c ¼-pk. Peppers, 2 for 5c. Eggplants 15@25c apiece. Cabbage. 5@10c a head. Lettuce 5@15c. Beets, new 10c bch, 3 for 25c. Sweet potatoes 20c ¼-pk. White potatoes, 15c ¼-pk. String beans , 20c qt. Tomatoes, hothouse 6 for 25c; cucumbers 5@15c apc. Celery 75c bch. Squash 5@10c apiece; Cauliflower 20@35c apc; mushrooms, 20c lb.

Fruit.—Apples 20c ¼-pk. Pineapples 25c apiece. Cranberries 20c quart; lemons 15c doz; grapefruit, 2 and 3 for 25c; $1.50 per doz; Oranges 25@50c doz.

BALTIMORE PRODUCE

Baltimore, Md., March 30, 1914.

Butter was steady. Eggs are firmer at 1c advance. Poultry steady.

Butter.—Creamery, fancy 28½@29c.; do choice, 26@27c.; prints 29@31c.; blocks 28@30c.; Maryland and Penna. rolls, 17@19c; process, 20@22c.

Eggs.—Near-by firsts, 19c.; western, 28c.; southern, 18c.

Live Poultry.—Hens, 18c.; chickens, 19c; old roosters 10@11c; ducks 20c.

Dressed Poultry.—Turkeys 25@26c; chickens, 18@22c; old roosters, 11@12c; ducks, 20c.

Vegetables.—Potatoes, Maryland and Penna. 65@75c bu.; beets, 4@6c bch; beans, green $4@4.50 per basket. Celery $1.75@2.25 crate. Cucumbers $4@5.00 bas. Lettuce $2@2.50 bas. Tomatoes $1.75@2.25 carrier. Onions $1.40@1.50 bu. Eggplant $3.00@3.50 crate. Squash $2@2.50 crate. Cabbage new $2@2.25 crate; $25@30 ton.

Fruit.—Apples, $3.00@5.50 bbl. Grapefruit $2.50@4.00 per box. Oranges $2.50@3 box.

Grain.—Wheat. No 2 red western, $1.00¼ Spot, $1.00½; corn yellow shelled, 70½c; Oats standard. white, 45¼@45½c; No. 3 white 44½@44¾c; rye, 60@69c.

Hay and Straw.—Timothy No. 1, $17.50@18; No. 2 timothy $16@16.50; do. No. 3, $14.00@15. No. 1, clover $16.00@16.50; No. 2, do., $13.00@15.00; No. 1, tangled rye straw, $11.50@12; No. 1 oat straw, $9.50@10.50; No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $31@31.50. Middlings, flour to white $29@30; western middlings, $29@29.50; city mills, middlings, $29@29.50.

NEW YORK PRODUCE

New York City, March 30, 1914.

Butter receipts were moderate, and the buying was conservative. There was a fair call for strictly high grade egg stock, but general trading is only moderate. Trade in poultry is slow and market generally unsatisfactory. Fruit and vegetables show little change.

Eggs.—State and near-by hennery whites, fine to fancy 25@26c; gathered whites 25c; fair to good 23@24c; fresh gathered firsts to extras 21@22c; seconds to thirds, 19@19½c; no grades 17½@19c; mixed 20@21c.

Butter.—Creamery firsts to extras 23½@25½c; thirds to seconds, 19@23c; state dairy 18@25c; packing stock 12@17c; process 16@20½c.

Cheese.—Whole milk specials, 19¼c; do common to fancy, 16@18¾c; skims 5@15c.

Dressed Poultry.—Turkeys, dry, 21@28c; chickens, 14@25c; fowls, 13@18c, old roosters, 14c; ducks, 12@18c.

Live Poultry.—Prices unsettled

Vegetables.—Cabbage, $1.50@1.75 bbl Green beans $3.00@6.00 bas. Carrots $1.25@1.75 bag. Cucumbers $1@1.50 doz. Lettuce $1.00@2.50 bas. Squash, $3@3.50 bbl. Celery $2@2.75 standard crate. Onions $2.25@2.75 100 lb bag. Tomatoes, 75c@$2.05 carrier, peppers $3@5.00 per box. Beets, $4@6.00 per 100 bunches. Potatoes $5.50@7.25 bbl. Sweet potatoes, $1@2 bbl. Egg plants, $1.50@3.50 per box. Cauliflower $2.25@2.50 standard crate.

Fruit.—Apples $2.50@5.75 bbl. Cranberries $9@15.00 bbl.

Grain.—Wheat No. 2 red $1.05, No. 1 Northern, $1.01¾; corn, new No. 3 yellow 75⅛c; oats, standard white 45½@46c

WASHINGTON PRODUCE

Washington, D. C., March 30, 1914.

Eggs.—Per dozen, 19c.

Live Poultry.—Hens, per lb., 19c; roosters, 11c; springers, 23@25c.

Dressed Poultry.—Hens, per lb., 22@23c; turkeys, per lb., 23@25c; chickens, 22@23c; ducks 18@20c; roosters, per lb., 12@13c.

Vegetables.—Potatoes, $2.25@2.50 sack; Onions, $2.00@2.50 bu.; Lettuce per bas., $1.00@3.00. Peppers $3.00@3.50 crate; Eggplant, $3.00@3.50 crate. Beets new, 4@6c bch, Carrots 5@6c per bunch. Cabbage $1@1.50 bbl. Cucumbers $3.50@5.00 bas. Sweet Potatoes $1.25@2.00 bbl. Celery per doz., 35@90c. Tomatoes $2@3.00 crt. Cauliflower, $1.50@2.25 per ½ crt.

Fruit.—Apples, $4.00@7.00 bbl. Grapes $4.50@7 ½-bbl. keg . Pineapples, $3@3.50 crate. Cranberries, $2.75@3.00 small box. Grapefruit, $3.00@4.00 crate.

WILMINGTON PRODUCE.

Wilmington, Del., March 30, 1914.

Butter.—Print butter, 38@45c lb. Creamery roll, 35@45c.

Poultry.—Chickens, dressed, 18 @ 25c; ducks, 18@20c.

Eggs.—30@35c doz.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk. Cabbage, new 4c up. Sweet potatoes 40@50c bas. Onions 20@25c; new, 20c qt. Eggplants 10@15c ea. Peppers 30@50c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch. Cauliflower, 20@25c each.

Fruit.—Apples, 15@25c ¼-pk. Pinapples, 20@25c apiece. Grapes 20@25c lb. Oranges, California, 25@30c doz. Florida, 25@30c doz. Bananas, 10@15c doz. Cranberries 20c quart. Grape Fruit, 7@10 each.

YORK PRODUCE MARKET

York, Pa., March 30, 1914.

Markets have shown little changes the past week. There is light trading at low prices. Eggs took a great tumble. Butter has also dropped.

Eggs.—18@21c doz.

Butter.—Country, 30@33c; separator, 35@36c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Scarce. Hens 15@16c. Dressed poultry, 50@85c each.

Vegetables.—Potatoes 10@16c ½-pk; 50c@1.00 bu; cabbage 3@8c each; lettuce, 3@10c; beets, 5c bch; radishes, 5c bch; onions 5c bch., 15@18c per ½-pk; lima beans 14@16c qt; sweet potatoes, 12@15c per ½-pk; lard 14@16c lb; celery, 10@15c; peppers, 8@12c doz; turnips 10@12c ½ pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 22@25c qt.

Fruit.—Apples, 20@35c ½-pk; pears, 15@20c per ½-pk; chestnuts, 12@15c qt; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.08 bu., corn, 82c; oats, 55c; rye, 77c; bran, $1.70 cwt; middlings, $1.70 cwt.

Wholesale Grain Market.—Wheat, 98c; corn, 74c; oats, 44c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., March 30, 1914.

Beef Cattle.—Trade was very slow, with offerings showing a slight increase and prices in a general way closing fairly steady. Lancaster County, Pa., Ohio and a sprinkling of Western cattle were included in the local run. Cows ruled easy and were little sought after, while calves closed weak.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,403	6,657	5,288
Previous week	2,265	7,997	4,137

Best steers	$8.50@8.75
Choice steers	8.25@8.50
Good	8.00@8.25
Medium steers	7.50@7.75
Common steers	7.00@7.25
Bulls	5.00@6.30
Fat cows	5.25@6.00
Medium cows	3.50@4.75
Thin cows	2.75@3.00

Veal calves steady

Best calves	$9.50@10.00
Good to choice do	9.00 9.50
Medium	7.50@8.00
Common do	6.50@7.00

Sheep and Lambs.—With lighter holdings there was a fair clearance with the better grades of lambs a fraction stronger, sheep were holding steady, the current output being more satisfactory.

Choice wethers	$6.25@6.50
Good do.	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.50@8.75
Good to choice do	8.25@8.50
Common to medium	6.00@8.00

Hogs.—The market was about steady at the prices with demand of a seasonable character Westerns as to size and quality $12.50@12.75.

City Dressed Stock.—Every variety of choice and prime class commanded full rates but trade was very conservative. Steers, 12@14c; heifers, 10½@13c; cows, 9@11c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., March 30, 1914.

Cattle.—The supply on sale last week was 90 loads, about the same number as a week ago. While the supply was not heavy the market ruled fairly active with the fat tidy cattle of all weigths generally 10 to 15 cents higher, while the cattle on the plain order were only steady. Heifers, fat cows and bulls were stronger. Bulls slow sale on account of warmer weather. Best fresh cows steady; other grades and springers slow. With 85 loads on sale this morning and only a moderate demand the market was slow at barely steady prices.

Good to choice	$8.70@8.85
Good 1,300-1,400 lb	8.30@8.60
Medium to good 1,200-1,300 lb	8.20@8.40
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb	7.50@8.00
Rough, half-fat, 1,000-1,300 lb	5.00@7.00
Common, 700 to 900 lbs.	5.50@6.50
Rough, half-fat	5.00@7.00
Common to good fat oxen	4.00@6.50
Common to good fat bulls	5.00@7.75
Common to good fat cows	1.25@6.75
Heifers	5.50@8.00
Bologna cows	4.00@4.40
Fresh cows and springer	25.00@85.00

Calves.—Veal calves in fair supply and with a good demand market closed $1 per cwt. higher. Receipts today 700. Market steady.

Heavy and thin calves	$5.00@ 7.00
Veal calves	7.50@10.00

Sheep and Lambs. — The supply of sheep and lambs during the week was light and with a good demand sheep closed 25 cents per cwt. higher, while lambs closed steady to strong on the choice grades, and the plain and common grades were slow. There were 10 double-deck loads of sheep on sale today, mostly clipped. The demand was good and the market active and higher on all grades, both wooled and clipped.

Prime wethers	$6.00@6.85
Good mixed	5.75@6.10
Fair mixed ewes and wethers	4.75@5.50
Culls to common	3.00@4.00
Prime lambs	6.00@8.75
Clipped lambs	5.00@7.25
Clipped sheep	5.80@6.00
Spring lambs	10.00@12.00

Hogs.—Supply of hogs during the week was light and early part of week ruled steady to strong, but in sympathy with other markets the latter part of the week the market was slow and closed 15 to 20 cents under Monday's prices. There were 45 double-deck loads on sale today. Market was 10 cents higher on the best weight grades, while pigs and lights were steady.

Prime heavy	$9.10@
Prime medium weights	9.20@
Heavy mixed	9.10@
Best heavy Yorkers	9.20@
Light Yorkers	9.10@
Pigs	8.90@9.00
Common to good roughs	7.75@8.35
Stags	7.00@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., March 30, 1914.

Cattle.—The higher market Monday, due to moderate supply and cool weather, was well sustained during the week on the good butcher grades. On the close butcher grades were in good demand and firm. With 4,000 head in the yards this morning, the market was 10 cents lower on all grades.

Choice heavy steers	$8.90@9.10
Fair to good	7.85@8.15
Yearlings	7.75@8.65
Handy butchers	6.75@8.25
Good to choice fat cows	6.00@6.50
Good to choice heifers	6.00@7.75
Butcher bulls	6.00@7.75
Feeders	6.60@8.25
Cows and springer	40.00@60.00

Calves.—Calves advanced on Monday, and the trade was in good position during the week. On the close the basis was $10.50@10.75. Calf arrivals today numbered 1,000 head. The market was strong.

Choice veals	$10.50@11.00
Lights and thin	6.00@ 8.75

Sheep and Lambs.—Altho the supply was large on Monday the demand was active and the basis higher. Sheep were firm, and best lambs sold at $8.25@8.35. Yearlings ruled strong and wethers active. On the close the market was active and a quarter higher generally on best lambs. Yearlings were in light supply, active demand and higher. Receipts totaled 12,000 head today. The market was strong to higher

Choice lambs	$8.75@8.85
Yearlings	7.50@8.00
Wethers	6.75@7.00
Ewes	6.25@6.65
Sheep	6.00@6.25

Hogs.—The market was strong and higher. On the week's opening Yorkers opened at $9.30 under good demand. Pigs were in light supply and firmer. On the close the market was slow and a quarter lower all around. Outside orders were scarce. On the close a few loads were left over. Arrivals numbered 14,400 today. The market was steady at a decline of 10@15c.

Heavies	$9.15@9.20
Mixed and medium	9.15@9.20
Yorkers	9.15@9.20
Light Yorkers	9.15@9.20
Pigs	8.90@
Roughs	8.30@8.50
Stags	7.00@7.50

Horses.—Receipts today numbered 1,000 head. Buyers were numerous and horses were in excellent demand.

BALTIMORE LIVE STOCK

Baltimore, Md., March 30, 1914.

Cattle.—Receipts for the week 2182 head against 1318 last week.

Steers	$6.25@8.25
Heifers	5.50@6.75
Cows	3.00@5.75
Bulls	5.25@6.75
Fresh cows	32.50@72.50

Sheep and lamb receipts for the week were 3020 head against 1361 last week. Light supply: market higher.

Sheep	$4.00@6.50
Lambs	6.00@8.85

Hog receipts for the week were 12,771 head against 10,680 last week.

Light western	$9.40@9.45
Heavy to medium	9.15@9.30
Near-by	9.35@9.45
Pigs	9.00@9.10

Calves.—Receipts for the week were 303 head, against 368 head last week. Fair supply market lower at $5.50@9.00.

CHICAGO HORSE MARKET

Chicago, March 30, 1914.

Horses were marketed freely last week, and some weakness was seen in undesirable animals, which sold slowly, prices ruling around $50@100 per head, but good horses had a ready sale at generally steady values. Farm geldings sold on a basis of $125@200 for poor to prime, and farm mares at $185@225, some desirable pairs of mares going at $400 and thereabouts. Wagon horses brought $165@230 per head, while drafters sold at $225 and upwards, depending upon weight and quality, with sales of prime pairs at $600@650. Pairs of chunks brought $320@585. —F.

NEW YORK LIVE STOCK

New York City, March 30, 1914.

Beef Cattle Receipts for week 3,400 head Market irregular

Steers	$6.00@9.00
Bulls	[illegible]@7.50
Cows	3.00@3.65
Dressed beef	12@13½c.

Calf receipts 5,500 head. Market steady.

Choice	$8.00@11.75
Culls	6.00@ 7.50

Dressed calves higher. Dressed veals, 14@18c.

Sheep and lamb receipts 8,600 head. Market strong.

Sheep	$4.50@6.25
Culls	3.50@4.25
Spring lambs	7.50@9.00

Hog receipts 12,800 head. Market steady. Choice, $9.25@9.50.

NEW YORK HAY MARKET.

New York City, March 30, 1914.

Hay prices remain fairly steady for all grades. Demand during the week was moderate and mainly for the better grades. Receipts were 363 tons. Timothy, No. 1, $1.05; standard, $1.00; No. 2, 90c@95c; No. 3, 80c@85; clover 60c@95.

Straw is quiet and fairly steady. Receipts today were 50 tons. Oat straw, 55@60c bale; rye, 95c.

NEW YORK MILK MARKET

New York City, March 30, 1914.

The demand is still dull, so dull that the dealers are struggling with a surplus estimated at 10,000 cans. This they are working up into butter and cheese. It is probable that the rate which the producers will receive in April will approximate the Borden rate. It is likely that the Borden rates will play a considerable part in the making of the rates which will be paid to the farmers this summer, for there is no immediate prospect that the exchange will revive its quotations. It will be a basis. The situation is further complicated by the influx of dairy products from Canada and other countries since the change in the tariff. Foreign competition will have an effect on the price. It is likely to be lower this summer than it was last, taking the whole season thru.

The receipts of milk and cream in 40-quart cans for the week ending March 28 were as follows:

Railroad	Milk	Cream
Erie	45,787	2,116
Susquehanna	7,524	336
West Shore	18,458	475
Lackawanna	58,150	1,520
N. Y. Central (long haul)	79,181	1,916
N. Y. Central (short haul)	11,990	90
Ontario	10,488	3,145
Lehigh Valley	1,169	1,281
Homer Ramsdell Line	....	....
New Haven	8,190	189
Pennsylvania	1,617	66
Other sources	1,672	19
Totals	310,226	11,153

ELGIN BUTTER QUOTATION

Elgin, Ill., March 30, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 24½@25½ cents.

TOBACCO MARKET

There was very little business transacted during the week. The large manufacturers claim to be well stocked and are decidedly bearish in their attitude toward packers, the latter in turn making the claim that they are stocked up and also unable to pay prices asked by growers. The situation as a whole is slow, suggesting need of some sort of mediation. There were very few sales by growers these being at $7.50@9 per cwt. Many growers are ready and even a little anxious to sell in order to turn attention to the new crop. Owing to recent developments they are unwilling to listen to the depressing story of packers and the latter have not yet learned that they must soon allow the grower some say as to prices.

The new Lancaster Seed Leaf Tobacco Growers' Association continues to grow in strength and interest despite the opposition of certain prominent individuals who are acting purely thru selfish motives. Growers should ignore the "warnings" of outside parties and ever remember the necessity of united action. At a meeting at Farmersville there were 120 growers present. 44 of whom had not sold their 1913 crop. Another branch organization was effected at Rohrerstown with a membership of some 25 growers. Financial methods are now being discussed especially with reference to the tenant grower, who of course presents the most difficult phase of the financial question. A permanent board of directors will be chosen April 15th.

The general tobacco market as reported from New York was devoid of large transactions. There was considerable interest in Sumatra tobacco and but little demand for other sorts. In Ohio section the crop is being delivered at $11 to $12.50 per cwt the advanced price being largely on account of a very short crop. It is seldom that so many contingencies arise in a single season. Current price of seed leaf $10; little Dutch $8@10; Spanish, $13@21 per cwt. In Wisconsin practically the whole crop is in the hands of packers and attention is being turned to the new crop. In Connecticut there will be an effort to grow a greatly increased acreage about the only limitation being that of labor, which is scarce there as elsewhere.—H. E. Tweed, March 30, 1914.

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Feeding Question.—I have a calf that my father gave me to raise. Kindly tell me how to feed it. H. N. C., Berlin, N. J.—First of all keep feeding utensils clean. After they are washed place them in the sunlight and air every time they are used. After the calf is a few weeks old, give it some oat meal or oil meal, well cooked and mixed with the milk. An egg now and then added to its feed is good. Keep calf in a clean stable where sun shines in on it. As soon as grass comes, let it run out. A little well-cured clover or corn fodder is good feed for a growing calf. Follow the methods of your most successful neighbors.

Fetlock Joint Weakness.—I have a horse that seems all right until I drive him a long distance, then he becomes lame in his hind ankle. G. W. H., East New Market, Md.—Clip hair off fetlock joint and apply 1 part powdered cantharides and 6 parts fresh lard every week or 10 days. This light blister will strengthen ligaments of joint and he will soon get well. During treatment he should be rested.

Chronic Cough—Indigestion.—I have a 10-year-old mare that had distemper last fall. Since then she has been coughing and I fail to stop it. I also have a 10-year-old horse that has had several attacks of indigestion. Before these attacks come on, his bowels are very loose. When he is sick, he does not roll and tumble, but lays down and looks around at his side and seems to be in great pain. C. O. E., Titusville, Pa.—Give your horse ½ oz. ground licorice, ½ oz ground ginger and a teaspoonful muriate of ammonia at a dose in damp feed, 3 times a day. Feed your horse carefully and give him a dessert spoonful of hypo-sulphite of soda and 1 oz. of ground ginger at a dose in feed, 3 times a day. Watering horses too soon after giving them grain is a common cause of this ailment.

Horse Needs Company.—I purchased a horse 11 years old, that has always been among other horses. I only keep one and think lonesomeness and want of company makes him irritable and nervous. He paws, jumps and pushes anything that he can reach with his hind parts, but does not seem to pull on the halter. When on road he is fearless and a good roadster. I dislike to part with him because he suits me to use. S. C. L., Pemberton, N. J.—In time he should wean away from his companions, but I have known similar cases that never did get over it. I have often suggested the placing of a window in stable where the horse could look out and see sights that attracted their attention which seemed to satisfy them. In other cases, I have suggested keeping a dog in the barn with the horse for company. This seemed to work fairly well. In other cases keeping a goat in the stable seems to satisfy. A cow kept in the same barn often quiets the nervous horse.

Warbles.—Sometime ago I bought 3 young heifers from a dealer. They were in bad condition and every one of them lousy. I sprayed them with disinfectant dip and now I find several swollen spots resembling a boil. I squeezed the bunches and out came insects something like woodworms. The cattle eat well but do not thrive as they should. The hair around these spots is dry and the skin scurvey-like. G. R., Fishers Ferry, Pa.—Your heifers are troubled with parasites known as grubs, warbles or bots, which are the larvae of a fly known as the heel fly or warble fly. Either the eggs or the moggots hatched from them are carried into the mouth by the cattle licking themselves and may hatch in the mouth or in the paunch and seem to migrate into the gullet and penetrate its walls, passing from there thru the tissues of the body and land in the back. They usually develop in the winter or spring. If you are unable to squeeze out grub, make opening in skin with a pen knife, squeezing them out, but not forgetting to kill them. Then apply 1 part carbolic acid and 30 parts water to grub holes, once a day. Give each of your heifers ½ oz. ground gentian, 1 dr. ground nux vomica and 1 oz. of ground ginger at a dose in feed, 3 times a day.

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"Marmalade,"	Crystal Andreas, San Bernardino Co., **California**
"Pansy,"	Evelyn Culler, Windham Co., **Connecticut**
"Toby,"	Geo. Lynch, Lake Co., **Illinois**
"Roine,"	Clarence F. Busick, Adams Co., **Indiana**
"Empress,"	Avery and Orle Knight, Chickasaw Co., **Iowa**
"Jim,"	Joey Edwards, Barton Co., **Kansas**
"Stubby,"	Harold Quick, Jefferson Co., **Kentucky**
"Merry,"	Isabelle Whitcraft, Baltimore Co., **Maryland**
"Rollo,"	Lillian Davis, Dukes Co., **Massachusetts**
"Peter,"	Charlie Mahoney, Chippewa Co., **Michigan**
"Bunny,"	John M. Borsvald, Polk Co., **Minnesota**
"Evangeline,"	Gladys Houx, Saline Co., **Missouri**
"Kris Kringle,"	Mallena Vashus, Dawson Co., **Montana**
"Tom,"	Helen Herrman, Cuming Co., **Nebraska**
"Benny,"	Harold Kiley, Warren Co., **New Jersey**
"Joe,"	Harold R. Palmer, Oswego Co., **New York**
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"Paul,"	Evelyn Sears, Grand Forks Co., **N. Dakota**
"Jolly,"	Hazel Cox, Darke Co., **Ohio**
"Pert,"	Georgia Spencer, Warren Co., **Pennsylvania**
"Irena,"	Colgate M. Searle, Kent Co., **Rhode Island**
"Sunshine,"	Eva Huddleston, Beadle Co., **South Dakota**
"Jean,"	John H. Elrod, Putnam Co., **Tennessee**
"Zip,"	Ella Fullam, Randolph Co., **Vermont**
"Lulu,"	Louise Damron, Benford Co., **Virginia**
"Scotty,"	Catherine Rohrbeck, Pacific Co., **Washington**
"Chum,"	Bozzie F. Thornton, Mercer Co., **W. Virginia**
"Pet,"	Sheldon Adams, Dane Co., **Wisconsin**

Notice we print the names of 30 of our 173 Lucky Pony Winners. We would gladly print the whole 173 names if we had room for them here, but we will send them to you just as soon as we hear from you. Possibly some of these happy children live in your county or a county near you and, if so, you probably know them because our Lucky Pony Winners are the best known children in their neighborhoods. However, it doesn't make any difference where you live; if you send us your name and are the lucky child to get "Winkle," he and his whole outfit will be shipped without one cent of cost to you. If you send us your name the day you read this, we will send you 1000 votes for "Winkle" and a big surprise that will double your chances of getting a Shetland Pony.

This Pony Free

"Winkle"

"WINKLE" is a beautiful little brown and white spotted Shetland. He stands about 42 inches high and weighs around 300 pounds. We have already given away 173 ponies to children all over the United States and "Winkle" is just as pretty a pony as any of these others. We selected "Winkle" from a big herd of Shetland Ponies because we thought he was the prettiest and cutest pony of them all just the kind of pet that any little boy or girl would love to own. "Winkle" is as gentle as a kitten and likes to play and romp with children all day long. He is a sturdy little fellow, too, and can haul along his little pony cart filled with happy children at a merry clip. If you send us your name and get "Winkle" he will carry you anywhere just about as fast as you want to go. Send us your name today and we will tell you just how to get him. Don't delay but do just as our other 173 Lucky Pony Winners did and send us your name at once.

Do You Want an Outfit Like This?

The Outfit

NOT only will we send "Winkle" to some lucky boy or girl, but we also send the finest kind of pony outfit along with him. The outfit includes a stylish four-wheeled pony buggy, a handsome nickel trimmed harness, a hand-made riding saddle and a wonderful Indian horsehair bridle. This bridle cannot be bought in stores, but is made especially for us by an old cowboy at Deer Lodge, Montana, out of beautifully colored horsehair which he weaves into remarkable Indian designs. No child has a prettier or more complete outfit than the one we send with "Winkle" and we know you will be the happiest boy or girl in your state if you send us your name and get this beautiful pony and outfit for your own. We had just as soon send "Winkle" and the Outfit to you as to any other boy or girl but first you must send us your name and address so we can tell you all about our easy plan. You may fill out the coupon below, or send us your name on a postal card but remember, do it now before it is too late.

Send Us Your Name Today If You Want To Own "Winkle"

Write Your Name and Address Here

THE FARMER'S WIFE PONY CLUB,
570 Webb Bldg., St. Paul, Minn.

Please send me pictures of "Winkle" and tell me about your Pony Club and also tell me how to take care of Shetland Ponies. I have no pony and want to belong to the Pony Club and get "Winkle" for my own.

Name..

R. F. D..

P. O.............................. State ....

GOOD FOR 1000 VOTES FOR "WINKLE"

JUST AS SOON as we hear from you we will tell you exactly how to go ahead and get **"Winkle."** Our Pony Club is known all over the country because it gives Shetland Ponies to good boys and girls. Don't let anybody persuade you that you cannot get this beautiful little pony and outfit because our plan of giving away ponies is different from others. The fact that we have already given 173 ponies and outfits to 173 boys and girls all over the United States, from the state of Vermont to the state of California, many going over 1,800 miles from St. Paul, is proof that we really give ponies away. The banker or postmaster in your town knows that the Webb Publishing Company of St. Paul, Minnesota, publishers of The Farmer's Wife and established over 30 years, is one of the largest publishing firms in the United States and can afford to give away ponies to advertise its papers. We never heard of a single one of the 173 children to whom we have already given ponies until they wrote and told us they wanted one and that is why you must send us your name and address at once, if you want us to send you **"Winkle"** and his elegant outfit.

EVERY CLUB MEMBER GETS A PRIZE

EVERY single child who sends us his name and joins the Pony Club will receive a handsome prize of his own choosing. Besides the Pony Outfit (and the Big Surprise we have for you) we will give Bicycles, Diamond Rings, Sewing Machines, Rifles, Cameras, Gold Watches, Flashlights and many other wonderful rewards that you never could get until now. Of course, **"Winkle"** and his dandy Outfit is the best prize of all and you have the same opportunity to get him as any other boy or girl if you send us your name now.

BE SURE TO ADDRESS YOUR POST CARD OR ENVELOPE TO

THE FARMER'S WIFE PONY CLUB
570 WEBB BLDG. :: ST. PAUL, MINNESOTA

What One Happy Club Member Says

Dear Pony Club:— certainly am proud of my pony "Babe." He had such long hair during the winter, but now he has shed off so pretty and is the prettiest pony we ever saw. He is so fat, too. I have had lots of chances to sell "Babe," but no siree, nothing would buy him. I love him more every day and I don't know what I would do without him—I'd be so lonesome.

I can never say enough for the Webb Publishing Company. I thank them over and over for giving me such a nice pony and outfit. They did all they said they would and treated me right.—Roy Brown, McCook Co., South Dakota.

PENNSYLVANIA FARMER

AGRICULTURE
THE KEYSTONE OF
NATIONAL PROSPERITY

ESTABLISHED 1880 PUBLISHED WEEKLY

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Headle Dr T J
Rutgers College
814

Girls' Garden and Canning Clubs.

By Mrs. H. W. GILBERTSON,
Sussex Co., New Jersey

CLUB PIN.

The first incentive to start the Garden and Canning Club work in Sussex County came thru hearing the specialist in charge of club work of the United States Department of Agriculture give an illustrated lecture explaining the work. The benefits of the work to the few girls who had already undertaken it made such a strong appeal that it was decided to give the girls of Sussex County the opportunities which the club work afforded. Altho in the Garden and Canning Club work a part of the 1-10 acre may be used for other vegetables, we decided to use the tomato only, in beginning the work, and thru the tomato to teach the canning of other vegetables. The club work was carried on as a part of the activities of the Sussex County Farm Bureau. The first steps taken were to secure the necessary prizes and to find grocers in the county who would be willing to purchase the tomatoes canned in tin cans. These details having been attended to, the enrolling of the club members began.

Getting The Enrollment

The County Superintendent of Schools co-operated with the Sussex County Farm Bureau in the work, and enrollment blanks and circulars were sent out to each teacher explaining the work, stating the prizes and basis of award. The basis of award was as follows: 30 points for profit on investment, 30 points for quantity of fruit raised, 20 points for quality and 20 points for the written essay on "How I Grow My Tomato Crop." Over forty schools were visited and talks on the club work given. The personal interview seemed to count for the most in getting the enrollment.

Planting Seeds, Preparation of Plot.

As members enrolled, two packages of Stone tomato seed, which had been tested, were given them by the Farm Bureau with the instructions for planting in window boxes. While the seeds were growing the girls selected their plots and had them prepared by the use of barn-yard manure, plowing and harrowing.

CLUB MEMBERS LOOKING FOR TOMATO WORMS.

When it came time for the first transplanting, various methods were used by the different girls. Some transplanted to other shallow boxes, some to tin cans, some to earthen pots, some to beds out of doors covered with glass, and others to tubes made of roofing paper cut 4 by 9 inches and fastened together at the top and bottom with paper clips. These tubes had no bottoms and were placed on boards which were set on tables out of doors during the day and put in the house at night. This was a very satisfactory method, for when it came time to place the plants in the plot the paper clips were removed and the dirt was left undisturbed.

When it was time to transplant into the field, each club plot was measured with a 100-foot measure and staked out, a record being taken of the length and width. The plots varied in shape, the ones which were two rods wide by eight rods long proved to be the easiest to cultivate. The number of plants to the tenth-acre varied from 272 to 544, according to the width between the rows and the distance between plants in the rows. This matter was left to the girls to decide. In transplanting they tried especially to avoid wilting and destruction by cut worms. The season was very late and most of the plants could not be set before the first week in June. Commercial fertilizers were used around the plants at this time to hasten the growth.

MOTHERS INTERESTED IN CANNING DEMONSTRATION.
X Shows Miss Lucy Bale, Winner of Eastern Championship.

Pruning and Staking

The next step was to visit each club member and teach "the how and why" of pruning and staking. The girls who took the pains to both stake and prune found that their plants bore earlier and for a longer period, ripened more evenly and the fruit being off the ground could be gathered with greater ease.

Combating Insect Pests and Diseases

The various plots were troubled at times by the flea beetles, potato bugs, blight, cut worms, green tomato worms and the bud-end rot. The latter was by far the most serious, as bushels of fruit had to be thrown away. The girls were taught to make bordeaux mixture and were given a lesson in spraying.

Club Meetings

Wherever there were as many as five club girls in the county living within a radius of four miles, regular monthly meetings were held the first Saturday of each month. The chief object of the meetings was to give instructions concerning the work which should be accomplished during the month. To add interest to the meetings we had a picnic, a spelling match, a lesson in making bordeaux mixture and spraying with it, besides out-of door canning demonstrations.

The Canning Work

The canning part of the club work seemed to be of greatest importance since it is true that at least 50 percent of all vegetables and fruits grown in our country go to waste for want of care at the proper time. By saving the surplus fruits and vegetables the high cost of living is reduced considerably and much waste is eliminated. Home canning thru club work provides a more varied diet for the home people, saves labor and time in the canning season, encourages greater production and teaches business management. While the tomatoes were ripening the girls were taught the canning of peas, string beans, beet greens, swiss chard, carrots, berries, apples, plums, etc., in glass for home use. The cold pack method, that is the cooking or sterilizing of the fruit or vegetable in the can, was taught in all of the canning work.

The girls found the canning in tin for market very interesting. The cans came with solder-hemmed caps which are soldered on by heating an iron called a "capping steel," and turning it on the cap until the solder is melted. We found that some of the ten-year-old girls did the soldering as neatly as the older ones. We used the National Club label for our cans and had the statement "Canned by the Girls of Sussex County, N. J.," printed at one end. Each girl in the club has a member's number which appears on each can she puts out. They are taught that when purchasers are satisfied with the quality and weight of the goods which they put out it will mean more orders to fill, while work poorly done will surely be traced back to the Club member. The Club motto "To Make the Best Better" is in itself an incentive to good work.

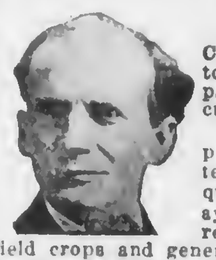
Canning Demonstration

Canning demonstrations were held at convenient points in the county so that each girl had a chance to learn each step of the work before undertaking to can at home. A small portable, out-of-door canner was used in giving demonstrations. A picnic dinner was planned for each meeting of this kind and the mothers were invited to come with the girls. In the early fall Mr. Benson, of the United States Department of Agriculture, gave an all-day canning demonstration in the county to which all housewives were invited. The club girls assisted him and over two hundred women attended the meetings. The late vegetables, such as cauliflower, lima beans, and sweet corn, were canned. The canning of sweet corn on the cob was of special interest to all present. Many instructions were given for the canning of various fruits and vegetables and the efficiency of various methods of canning were discussed and demonstrated.

AT CLOSE OF A LESSON IN CANNING.

(Continued on page 14.)

Farm Crop Notes



By
R. P. KESTER
Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

NATURAL METHODS OF SOIL IMPROVEMENT

Controlling Soil Moisture

No matter how much plant food may be present in the soil, unless the moisture condition is right, best plant growth is impossible. But where the right moisture condition is maintained thruout the growing season plants will grow, even on the poorest soils.

Water is the great solvent of minerals. It must be ever present in the soil so as to keep prepared a continuous supply of plant food in an available form. Not only does water perform this work, but it acts as a common carrier; it is the vehicle by which food is freighted to its destination in the body of the living thing,—plant or animal. Since this operation must go on continuously to maintain health and growth, it is for the farmer to do the right thing at the right time in dealing with his soil so that he may have ever present in the season of plant growth a sufficient supply of the great necessity—soil moisture.

There are two extreme conditions of soil moisture, either of which is fatal to best plant growth. The farmer gives as a cause of poor crops the prevalence of one of these extremes more frequently than any other; "it is too dry", or, "it is too wet." Either of these excuses is considered sufficient, and Providence is indirectly charged with the act of cutting short the food supply, yet the supply of soil moisture is largely within the control of the farmer. The successful farmer is invariably the one who has made the conditions of the soil such that the desired moisture conditions prevail thruout the growing season.

There is no doubt but what there is a greater variation in the moisture content of our soils now than there was a century or more ago. Strange as it may seem, the causes,—the destruction of our forests and the failure to maintain the normal humus content of the soil—bring upon us both the deluge and the drouth. When we awake more fully to our duties as a nation and are able to take the larger view we will stop the wholesale work of destruction and begin the work of construction. The first thing to do,—the thing of vital importance, is to reclothe the denuded mountains and steep hill-sides with trees. A regrettable thing is that public appreciation of this need is, as yet, so slight.

A great deal of time, labor and fertilizer are annually wasted on land that must be underdrained before full and paying crops can be grown. Not only fields that have spouty places but also low lying, or level fields in which the subsoil is too close or solid to permit free removal of water after heavy rains, must be underdrained to be satisfactory. Fields that were too wet when first cleared are found to contain and retain too much water at certain seasons. This is because the tree roots and the holes left by their rotting have disappeared, and also because of the lessened humus content. Failure to grow deep-rooting plants, as the clovers, also allows the under soil to close up and become too close for easy movement of water either upward or downward.

Too much water is detrimental to plant growth in several ways: It dilutes the plant-food solution; being heavier than air. It fills the interstices in the soil, excluding the air. It causes a cooling process—and thus lowers the temperature of the soil. It prevents early and sufficient cultivation.

Surface draining by open ditches helps some but does not do the work that tile drains will do when rightly installed. The distance apart and the depth to place drains depend upon the character of the soil and subsoil. In average gravelly or sandy loam, it may be estimated that a line will drain ten feet each side of the drain for each one foot in depth. In heavy, clay soils they should be closer. Unless stone of the right kind are at hand, and labor plenty, tile is the cheapest, and it makes a better and more permanent job. Draining land is expensive but the labor and fertilizer lost in farming wet land will soon pay for a draining system.

About 42 inches of water falls annually in the way of rain and snow in eastern United States. In spite of this, the average farm land, farmed in the ordinary way, suffers for the want of water after a very few days of dry weather in summer. Water sinks into the soil less readily than it did when first cleared because it has become more solid and contains less humus. Shallow plowing, always at the same depth, has produced a sort of artificial hard-pan almost as impervious to moisture, thus permitting less moisture to sink into the earth and causing more to run off the surface, thus washing. The place to begin correcting this condition is by deeper plowing, thus breaking up this artificial hard-pan and producing a deeper and more mellow soil that will more readily absorb water. Then as we increase the humus content by sowing catch crops, cover crops—especially deep rooting ones—growing heavy sods etc., we start on the way of being masters of the situation.

When warm weather begins, this soil water or moisture begins to move upwards to the surface by capillary attraction and is evaporated into the air. If the surface of the ground be covered so as to keep the sunshine and the air from it, evaporation can not take place and capillary action ceases as water does not come up any faster than it is removed from the surface. This mulching may be of any material such as straw, hay, leaves, manure, or dry, loose soil. The beneficial effects of a mulch are many and are too little noted or appreciated either by farmers or soil experts.

Harrowing or otherwise stirring the surface breaks up the top, thus causing it to dry and make a very satisfactory mulching material, as the dryer soil is, the less rapidly does water move thru it, either up or down. Harrowing fall plowing as soon as dry enough in the spring, and following the plow in spring with the harrow is the way to hold the generous supply of water in the soil we always have at that time. If we do this thoroly and in time, we can be reasonably independent of the summer shower. We might as well neglect to store and protect our summer's supply of ice in winter, because there is lots of it then, as to neglect to protect and keep for summer use the soil moisture because there is plenty of it in the spring. Harrow and cultivate early and often. Crop production can be increased and increased economically by regulating and controlling the supply of moisture by drains, mulching, and cultivation.

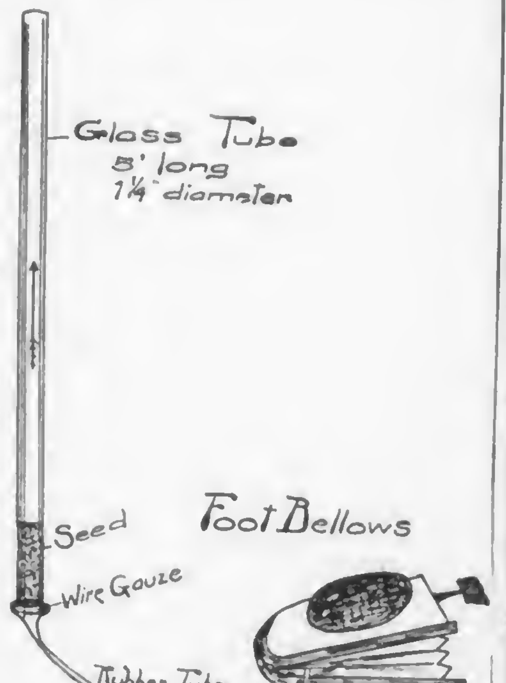
Next article, Humus and its increase. R. P. K.

CLEAN SEED AND CLEAN TOBACCO BEDS

Clean Seed.—The majority of farmers appreciate thoroly the value of cleaning their seed wheat, but how many tobacco farmers pay just as much attention to cleaning their tobacco seed? If one desires to produce a maximum crop of tobacco it is just as necessary to clean the tobacco seed as it is for the wheat farmer to clean his wheat seed.

How To Clean The Seed.—A very simple arrangement for cleaning tobacco seed may be made by attaching to a foot bellows, a glass tube about five feet long and 1¼ inches in diameter, having at its bottom end a small sieve, thru which the tobacco seed will not be able to pass. By means of a brass fitting the glass tube may be connected to a rubber tube from the bellows.

A suitable quantity of seed may be placed in the tube and by means of the foot bellows a steady stream of air can be forced thru the tube, which will blow out the dust and small undeveloped seeds. By blowing out the small seeds only the large and well-developed seeds will remain behind. If only the large and well developed seeds be sown, a much better and more even stand will be gotten.



TOBACCO SEED TESTING APPARATUS.

Steam Sterilization of Seed Beds.—The scarcity of good plants thruout the tobacco-producing sections of Pennsylvania during the season of 1913 has led to a development of much interest in the growing of plants. Quite a number of commercial growers have begun to steam sterilize their seed beds and have met with much success. The necessary equipment for the operation consists of a sterilizing pan and a steam boiler, with either pipe or steam hose connections. A convenient size for the pan is 6 feet wide and 10 feet long, with a depth of 14 inches. The platform of the pan may be made of wood and the sides of galvanized sheet iron. It is probably advisable, however, to make the platform as well as the side of sheet iron, since the wooden pan has been found to warp.

Again, if the entire pan is made of sheet iron, the life of the pan will be greatly increased. The connection for the steam pipe should be made to enter from the platform and should consist of a T-shaped pipe in order to scatter the steam and permit the tearing up of the soil. Preparatory to sterilizing the beds should be dug and raked ready for sowing. The sterilizing pan should then be inverted and pressed down into the soil in order to retain the steam. The steam should then be turned on from the boiler, which may be of any type of steam boiler or from a steam engine as is commonly used to run a threshing machine. A pressure of about 70 pounds should be maintained for not less than from 25 to 30 minutes. At the end of this period the pan should be moved along in the bed to a new position and burlap should be thrown over the sterilized portion in order to retain the heat as long as possible.

Results of Steam Sterilization.—Sterilization in the first place kills all weed seeds and dispenses entirely with the laborious job of weeding the beds. This saving in labor will in itself pay for the cost of sterilization. It also kills any fungous diseases or insects which may be harboring within the seed bed. The soil is gotten into a better physical condition for sowing and it has actually been demonstrated that plants may be grown within a shorter period of time when the beds have been steam sterilized. The practice saves labor and time.

Low Cost of Sterilization.—The cost of a suitable pan need not exceed $10 to $12 and when we consider that the pan should last from 8 to 10 years, the annual cost of the pan would be only about $1.50. The only additional cost is for the labor of two men, one to fire the engine and the other to assist in moving the pan, the cost of fuel and the hire of the engine. The plan of steam sterilizing beds has worked successfully with a number of commercial growers in the tobacco producing sections of Pennsylvania and it well deserves a trial by every tobacco grower.—H. R. Kraybill, Lancaster Co., Pa.

Commission Merchants and the 35-Cent Dollar---II.

By FRED W. DEAN, Susquehanna Co., Pa.

Accepting the suggestion given me in the experience related in my article last week "that all commission merchants do the same thing," the following winter I went to one of the large market cities of New Jersey where I felt that I had previously been swindled out of several thousands of dollars. Before I left home I marked up a lot of empty egg crates with private marks. Leaving my son to handle the home end of the deal, I traveled to the city. When I got off the train my name was William Morris. I secured the use of a small cellar in one of the suburbs of the city and rented a room near the produce market district.

The following day I made the acquaintance of several of the leading commission merchants as a buyer of strictly fresh eggs, vegetables, etc., taking care to show a considerable sum of money. Then I wrote my son to commence shipping eggs and always to ship on the train leaving our home town in the evening so that the goods would reach the city the next morning. I also interviewed the express company as to probable time of delivery in the produce section, and learned that it would be about 12 o'clock, noon. I always got on the job about 11 o'clock A. M., always keeping an eye on the commission house where my son was to ship. When the express wagon drove up to this house I watched for my crate of eggs.

I soon learned that these dealers did not like to sell to strangers and that they did not like to sell eggs until they had been repacked. Their reasons for this are apparent. I succeeded, however, in getting every crate of eggs shipped, up to four crates, one each from four different firms. By this time I began to get returns from home and they were what I had expected. The returns showed a graft of two to four cents per dozen on every crate. I then went over the same four houses with a second shipment. I had learned from experience that the shortage in returns is usually laid to the bookkeeper, hence the necessity of getting them on two counts.

We went over the four houses with a second shipment and I secured the next four crates, one from each house, also a crate of comb honey which had been included with a crate of eggs and purchased by myself. On these second shipments the graft was from four to six cents per dozen on the eggs and three cents per section, or 72 cents on the case of honey. One dealer wrote me a letter saying that he had sold my eggs at the very highest price, 40 cents per dozen. I held the sales bill at 45 cents! I was always careful to take an itemized bill of sales, showing just how much I had paid for the goods purchased. This firm, as did all of the others, deducted the express and commission charges from the price reported. I took all my purchases up to the rented cellar where I disposed of the good, keeping the empty crates.

The heads of the four firms that I had dealt with were the leaders in the produce business. One was the president of the produce dealer's association, and was said to be worth several million dollars. He was the responsible head of the oldest, largest and richest commission house in his city and was known to be a philanthropist and a power in politics, the right-hand man of one the United States Senators of the state. One of the others was secretary of the dealers' association, one of the "upper ten" of the produce business. I secured the services of an ex-judge as counsel but later found that he was a close friend of the president of the association and was looking for a rise in politics, which did not help my case any. I started suit under difficulties and finally insisted upon going before the grand jury of the county. When I got there I found that the members of the jury knew almost as much about the case as I did, and while they were very much interested in the evidence I presented and asked me a lot of questions showing a knowledge of the deal that they could only have obtained from the dealers themselves, they appeared to be more interested in indicting me for blackmail than in indicting the commission merchants for embezzlement. The county prosecutor finally agreed to allow me ten minutes to present my case, but when I got before the grand jury they were so interested that they took nearly one hour.

I found that I was to be sidetracked. I secured the services of another lawyer, and he told me that I had a hopeless case. He explained the political situation and showed the impossibility of securing an indictment against the president of the association. I then went to a large daily newspaper in the city, only to find that the rich man was a stockholder in this paper. I soon found out that I was only one against a powerful organization. I suspect that I would have found a lot of friends among the consumers if I could have gotten in communication with them, but all avenues were closed to me.

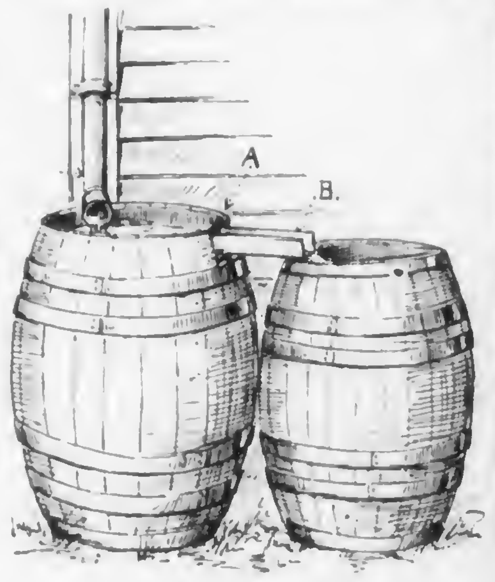
In the meantime the commission merchants got busy and sent me new bills of sales with checks inclosed covering the amount embezzled. I still hold those checks as proof of the transaction. One check is for $2 the amount held back on two crates of eggs. One is for $3.70, the amount retained out of two crates of eggs and one case of honey. One is for $1.71, on two crates of eggs. The fourth house failed to send a check for the amount retained, but it is over $2 on the two crates of eggs. As in the former deal, told of last week, the deficiencies were always greater on the second shipment than on the first.

These men as in other cases laid the errors in settlement to their bookkeepers. Poor bookkeepers! One dealer came to see me and he said that he had discharged his bookkeeper as he would not have any one around his place that was not strictly honest. But I recognized the man as the one I had done business with and it was his hand writing on the bill of sale, bill rendered and the check. He was his own bookkeeper. The grand jury asked me who I represented; the government or an association of shippers. I told them that I represented 50,000 grangers, which was true in a sense. But when I got home with my evidence I went before the grange with it. They were greatly interested but they could only give me sympathy, and sympathies do not count for much in such cases. I was already out in cash something over $200, but I had valuable information and experience.

NOTE.—The third article in this series will appear next week.—The Editors.

FERTILIZER WASTE

According to a recent bulletin, No. 37, of the Department of Agriculture, 75 percent of a highly valuable fertilizing material in the form of tankage and blood from the country slaughter of food animals is being wasted thruout the country. In addition, $22,000,000 worth of ammonia, from which ammonia sulphate, another valuable fertilizer could be made, is annually wasted by the practice of making coke in the beehive type of oven. After discussing the relative values of the different fertilizers the bulletin advocates a co-operative system among American farmers, such as that in vogue in Denmark, where killing is practiced on a co-operative basis in small country abattoirs and the blood carefully preserved for fertilizing purposes.



RAIN WATER STORAGE.

CATCHING RAIN WATER

If you have to depend upon barrels for catching and holding rain water try this plan. Secure two or more barrels. Set the first under the eave trough but block up so as to be higher than the next barrel. Cut off a stave or bore a hole about two inches from the top and fit in a metal trough or a short piece of pipe to carry water to the next barrel. By arrangement of blocking any desired number of barrels may be arranged in series.—Sylvanus Van Aken, Ulster Co., N. Y.

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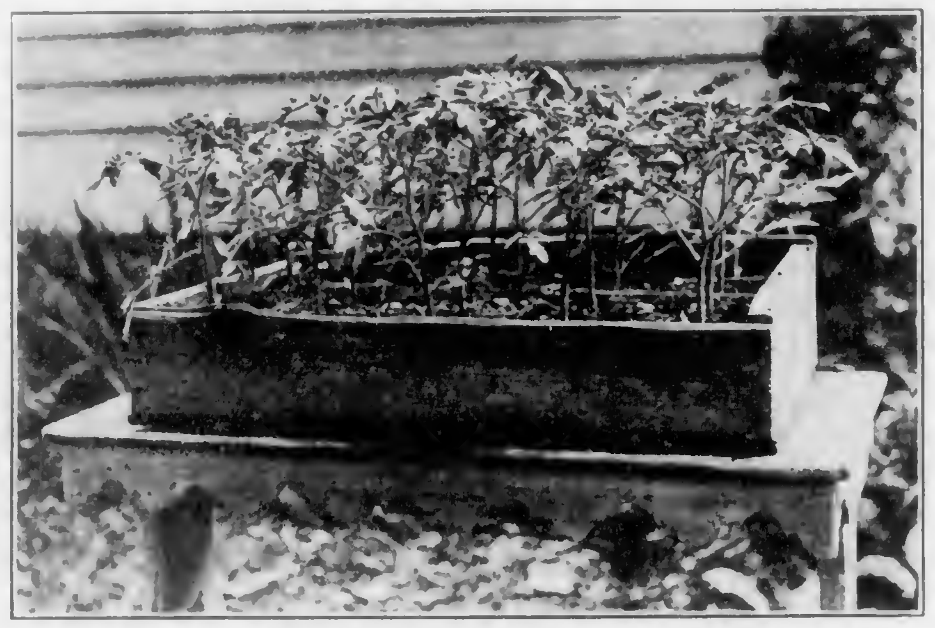
Horticulture

GROWING TOMATOES

The first essential in growing good tomatoes, is to have seed from good tomatoes to start the plants from. Seed should be saved from fruit that is solid, of good shape, fair size, and has ripened early in the season. By saving seed year after year from such tomatoes the strain will be improved and tomatoes that will ripen a little earlier each year will be secured.

In the fall some good garden soil should be stored in the cellar in which to start the plants the next spring. Unless one has an extra good place to keep the plants and care for them after the seeds germinate, I would not advise starting them very early. I have started them in April and had ripe tomatoes from the plants just as soon as I did from those twice as large that were budded when set, and both had the same care in setting and the same culture afterward. I prefer a shallow box in which to sow the seed. The soil should be finely pulverized, then firmed before sowing the seed. I take time enough when sowing to separate the seed so they are about half an inch apart. The plants will be more stocky than if the seed are sown close together in a tin can as some do, and they can be transplanted without disturbing the roots as much. After the seeds are placed on the soil they are covered with a fine soil to a depth of 1-8 inch, which is firmed, then carefully sprinkled with warm water, the box covered with glass or cloth and put in a warm place. Keep warm and moist and the seed will germinate in a few days.

When the plants have the third or fourth leaf on they are transplanted. I prefer to use boxes for most of my plants. It is less work to care for them and move them around than if in separate dishes. I use boxes about 4 inches deep and of convenient size to handle easily. After filling the box with finely pulverized garden soil, I divide it off into four-inch squares by pressing strips of pasteboard down in the soil. Small holes are made in the center of each square and a little water poured in. After standing a few minutes to let the water soak in the soil, the seedlings, which have been first watered to make as much soil cling to the roots as possible, are carefully transplanted, the soil is well firmed around the roots, and they are kept in the shade for a few days; then placed where they can have all the sunshine possible, and when warm enough, given plenty of air; for we want strong, stocky plants instead of tall, spindling ones.



PLANTS IN BOXES DIVIDED INTO SQUARES BY PRESSING STRIPS OF CARDBOARD INTO SOIL. EASILY HANDLED AND CAN BE TRANSPLANTED WITHOUT CHECKING GROWTH.

It is usually safe to transplant in the ground when the trees are in full leaf. By this time the plants in the boxes should have filled the squares with a mass of roots, which need not be disturbed enough when transplanting to check the growth of the plants, provided the plants were well watered a little while before so the soil will cling to the roots and not crumble off. Transplant just before a rain if possible. If not, water the plants after they are placed in the holes dug for them, then draw soil around them and tread firmly over the roots, setting plants so they are covered nearly to first leaves. If the plants have a long stem, dig a trench and lay them down so the stem will be all covered, bending the top of the plant carefully. Roots will grow from the whole length of the stem and the plant will have a much greater feeding capacity, and will have better soil in which to grow than if set in a deep hole.

Cultivate often and so keep mulch around the plants to conserve moisture, and if you have a fairly rich soil you will be rewarded by an abundance of tomatoes. Sometimes a mulch of strawy manure is placed around the plants after the fruit has set.

My method of supporting the plants is as follows: I set the plants in two rows running north and south. The row of plants on the east side are tied to posts set in the ground and held in place by being tied to a wire which is fastened to stout posts at either end of the row. The side shoots are pinched off from plants as soon as they appear, and the main stalk is tied to a post. You will get ripe tomatoes sooner by this method. In the second row the main branches are allowed to grow and are supported by a rack to which they are occasionally tied. The rack is made by nailing three long edgings or boards horizontally on three short ones about 2½ or 3 feet long, one being placed in the center and the others near each end, the lower board being placed near enough the ground to support the first clusters of tomatoes. Near the top of the end posts a short post is hinged by driving a large nail thru both. These will support the racks. After using for a season these racks can be folded up and placed under shelter and can be used for several years. The tomatoes that are started later to use green in the fall are not supported. They can be better protected from the early frosts without it. By combining the pole and rack methods in the way described, the plants will all get more sunshine, the tomatoes ripen sooner, and they will be handier to get at and easier to pick. It is well to remember that in cultivating tomatoes extreme care should be used so as not to break the tender shoots of the plant. Use a hoe where care is necessary.—M. W. Jenkins, Delaware Co., N. Y.

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STRAWBERRIES ON THE HOME FARM

The strawberry is hardy, adapting itself to great extremes of environment, and is easy to cultivate.

New varieties are often grown from seed, which is a very simple matter. In this way new strains or varieties may be originated, differing in taste and color from the parent plant. In all events it is well to study the culture and habits of these plants if one wants even a small bed for home use; for like all fruit culture, neglect is the death of the plant. The writer once set over 2,000 plants in a cold northern climate and during the three years of effort to raise berries for profit much of great value was learned, regarding this pleasant garden work.

The soil best adapted for strawberry growth is found in the northeastern part of the United States, and is known as a warm, quick sandy or gravelly soil. Soils may be adapted to strawberry culture by adding sand where the soil is too heavy and black, and by fertilizing where the ground is too poor otherwise; in fact, they may be grown almost anywhere, by suiting conditions to their requirements; but, where the soil is naturally light and sandy, not only will the plant be better but the yield will be abundant and the berries will be larger in size and of a better color.

A southern or eastern exposure is best for results. By the use of mulches the time of ripening of the crop may be governed to suit the grower, even when but one or two sorts are grown. To ripen early, the mulch or winter covering must be withdrawn from the plant. Two weeks after the early crop is beginning to set on the vine remove the covering from the later crop.

The best berries are grown on land where some other cultivated crop has been grown for at least one year. In this way one may avoid the pests known as wireworm, white grub, and cutworm, that infest the new sod-land. Beans or potatoes are a good crop for the first year's tilling before the berries.

Let us suppose that our readers are thinking only of a small patch of berries: we will begin with the preparation of the land. The field methods where great crops are expected, differ somewhat from the small growers' methods. Plow the ground deep, so that all organic matter may be well turned under. Pulverize at once with a harrow, making the ground as fine as for a seed bed. Of course we are assuming that the soil has been studied and put in proper condition. In setting the plants, select rainy weather, either early in the spring, or during August or in this climate even as late as September. If the day is not cloudy and showery, soak the plants well after setting, and with an additional wetting of the ground about them, they should not wilt. The writer has had much better success with home grown plants than with shipped plants, for several reasons. In the home-grown plant a ball of the earth may be retained about plant when it is set; therefore, the roots are not disturbed, nor allowed to dry out. The other reason is that in many instances the long distance of shipment, and the consequent heating of the plant destroys it, or puts it back in growth.

Two persons make better progress in setting than one. A man, and a boy will do more work and better than one person. Home grown plants have less fine roots, or feed roots at time of setting and as these are dependent on the soil for food they should be set as soon as taken up. The roots should be spread out in the hole, umbrella-like, as this is their natural position. A spade is the right sort of a tool to set with. The spade should be lifted full of dirt which is scattered about the plant when set in and held in position by the "setter." The importance of setting just the right distance in the earth cannot be over-drawn. Setting the plants either too deep or too shallow is equally disastrous. When the feeding roots are well spread, in the broad, flat hole the earth should be pressed firmly up over all the roots, yet not covering the tender center leaf. Taking off two or three of the outside leaves gives the plant less work to do, and is of importance. The plants should be set at least three feet apart, leaving a space in which to train the runners, the runner system being the most natural way of producing new plants. These runners should not be allowed to run at random, as a row of plants is better than a bed in fruit gathering time. The old plants bearing well the second year, must be taken out after the third bearing or the third year of growth, but a little care will direct the new runner plant into its place, and the use of the hoe is then required in order to keep down weeds and also to keep a moisture conserving dust mulch about the new plants.

The home production of plants for sale is a paying matter, if one can take the time to develop the young plants. Several kinds should be selected upon the advice of a reliable grower for the start, after which the best plan is to cultivate up some new plants from your own beds, for the next setting. I have found that a plant set in the spring will produce several runner plants, only one of which should be allowed to mature. The rest are taken off as soon as they appear, sending the strength of the plant to its own roots.

When the plant is in bloom, some nitrate of soda, about 100 pounds to the acre used in solution rather than in the form of salt, brings the best results. Good berries may be grown without this, however.

The transfer of pollen from one plant to the other is important, as upon this operation hinges the success or failure of the crop. Good weather and an abundance of bees on the farm ensure proper cross pollination of strawberries. As the wind will not usually carry the pollen over more than four rows of plants it is necessary in order to be on the safe side to have about every fourth row a "perfect flower" plant, which will simply mean that the flower must have within itself both the male and female elements or "self fertilization" power.

It is hard to specify just when the plants shall be set, as the climate has much to do with it, and especially the rain-fall.

There are two ways of planting that are about equally good, one in hills where the hoe is depended upon for keeping the ground in shape, the other in rows where cultivation will be done with the plow. The last method is called matted-row cultivation, but for the small grower the first named has proven best. Some big growers set the plants 18 inches apart and make a great success of the culture. Everything depends upon the thoughtful care and cultivation of the plants.—H. I. Lockwood, Philadelphia Co., Pa.

Commercial Peach Growing.—Special Bulletin No. 63 of the Michigan Agricultural College deals with commercial peach growing in Michigan. While the bulletin deals more particularly with Michigan conditions it enumerates many general items applicable to any section of the country and does not differ in the essentials from treatises on this industry in other parts of the United States.

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Improvement of Permanent Pastures.---No. V.

By JOHN H. REISNER, Cornell University.

The problem of adding fertility to the soil from an outside source has previously been discussed as a means of pasture improvement. It is one of the most serious considerations in pasture management, because what might improve one soil may not affect another, and varying conditions must be met in different ways. Where soil is acid and needs lime, the application of fertilizers to such land will likely be a complete loss. Lime should have been added first. Again, where the soil is poorly drained, lime, organic matter or commercial fertilizer might give no results whatever. What is needed, first and probably most, is simply drainage. The question comes up at once, how are we going to determine what to do, what to add, how much to add and when to add it for our meadows? Unless we know from experience what to do "profitably" we must experiment. This is absolutely necessary if we are to expect successful improvement.

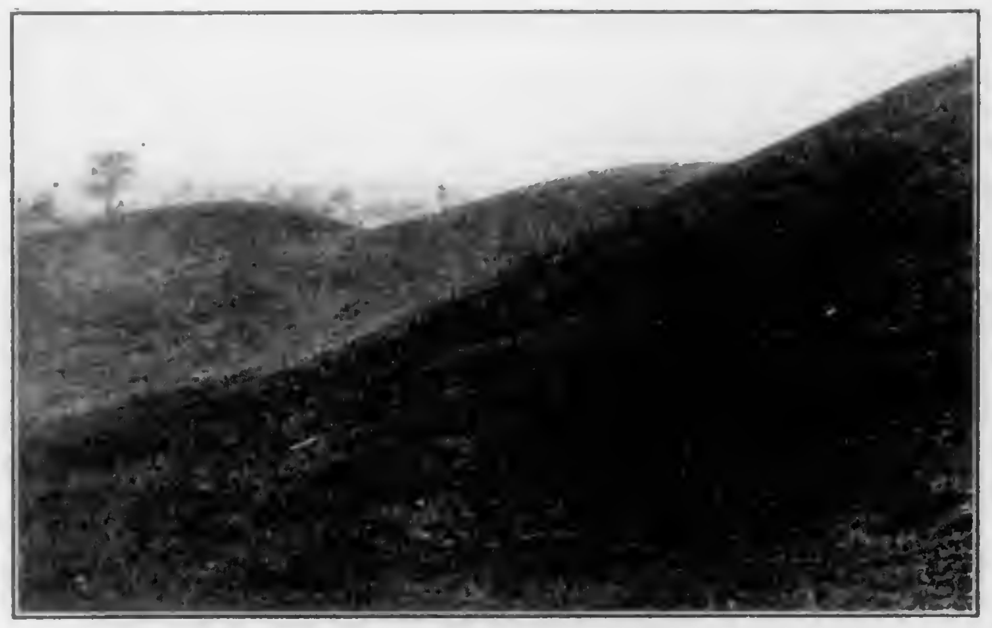

FIG. 1. THE ROBERTS PASTURE AT CORNELL UNIVERSITY HAS HEAVY STAND OF GRASS KENTUCKY BLUEGRASS AND WHITE CLOVER PREDOMINATING. HAS BEEN IN PASTURE FOR MORE THAN 30 YEARS.

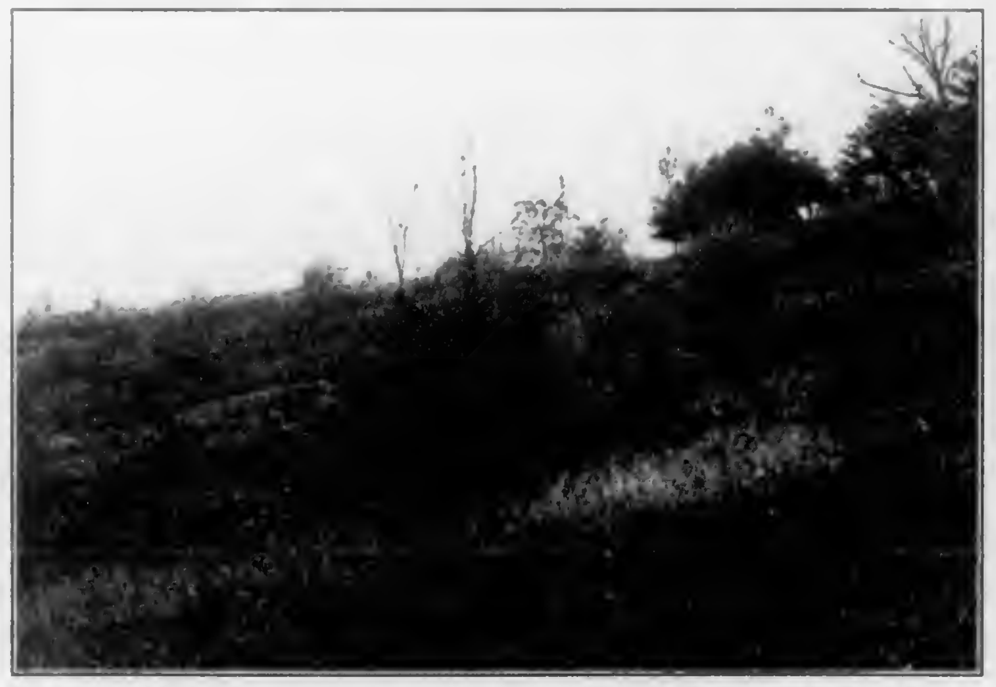

FIG. 2. THE OTHER SIDE OF THE HILL ON WHICH THE ROBERTS PASTURE IS LOCATED SHOWS WASTE FROM NEGLECT AND MISMANAGEMENT.

Photos from Bulletin 280, N. Y. College of Agriculture.

The accompanying diagram may be taken as suggestion for such experimentation, and changes made to conform to any local set of conditions. Those who do not wish to carry on very careful trials but who desire to test out the results of different soil treatments can do so by entirely disregarding the plans of the diagram. Applications of the manure, fertilizer and lime can be made to the grass and results noted. But the results will be only qualitative. There will be no certain basis of comparison by which we can determine quantitatively what application was the best. This will become more evident as we consider the diagram. Such procedure is not recommended.

Some certain part of the pasture should be taken, (1) because it is representative of the conditions generally in the same field or on the same farm; (2) because it will give uniform conditions of soil, drainage and sod, and the results obtained will be due to the treatment and that alone. Here then we have a fair and accurate basis of comparison. The units or squares as represented in the diagram represent 1-40 acre areas. The three long rows of plots, A, B, and C, represent tests for 1,000 pounds of burned lime, no lime, and 2,000 pounds burned lime per acre; while the short rows, 1, 2, 3, etc., represent tests with the fertilizers, manures, methods of cultivation and reseeding. Thus every plot, except the check plots, show a different experiment. The check plots are untreated so that we can see whether or not the experiments are successful. It should be noted that each row of the check plots will show the effects of 1,000 pounds lime in A2; 2,000 lbs in C2, and of no application of lime in B2. Row 1, for example, will show the effect of applying 100 pounds nitrate of soda to the grass, without lime; with 1,000 pounds lime added and with 2,000 pounds lime added. Thus a large number of experiments can be made without greatly increasing the labor and care.

The plots are laid out 2 rods square, which is just 1-40 of an acre thus making one side 99 feet and the length of the other side will be the number of plots required times 33 feet. The A, B, and C rows should be marked off first and limed, so that a few weeks can intervene between the application of the lime and the commercial fertilizers. Rows 1, 2, 3, etc, can be measured off and treated without much trouble. The treatments are given in acre amounts, and also in the amounts required for each individual plot. It will be noted that the application per plot is just 1-40 that of an acre.

1000 Lbs. Burned Lime or its Equivalent

	100 pounds Nitrate of Soda 2½ pounds per plot	Check Plots Shows effects of lime only	200 pounds Nitrate of Soda 5 pounds per plot	10 tons Manure ¼ ton per plot	Check Plots	5 tons Manure ⅛ ton per plot	Cultivation using disk., spike tooth or spring tooth Harrow	Check Plots	Cultivation and Reseeding	200 pounds Fertilizer 9:4:7 5 pounds per plot	Check Plots	360 pounds Fertilizer 9:4:7 9 pounds per plot
A												
B												
C												
	1	2	3	4	5	6	7	8	9	10	11	12

2000 Lbs. Burned Lime or its Equivalent

Tentative diagram of an experimental plot showing methods for determining best results that can be obtained by applying outside source of fertility to the grass lands. Each square is 2 rods by 2 rods and represents one-fortieth of an acre. Comparable results can only be secured in this way.

In comparing the results, the following considerations should be noted: 1) Which of the treatments show greatest effect on green growth? (2) Is this growth sufficient to offset the cost of the treatment? (3) Has the treatment had any effect on the palatability of the grasses as shown by the preference of the cattle for the grasses of these plots? Many are already objecting that these methods of experimentation require too much time, worry, etc. Only this can be said in answer, that we are considering pasture improvement as of great importance in our farm management, and until we are willing to make the effort to find out the best practices of improvement, our valuable pasture lands will continue in their present condition.

The experimental plots as diagramed are comprehensive, so that the number may be decreased if desirable. For the first year or two, it might be wise to run only a few plots, and then at a later time make a more complete trial. If this is done, the treatments to be used should be those which the experience of the farmer would indicate as being most likely to succeed. Needless experimentation should be avoided, but this is less likely to occur than too little experimenting on the part of the farmer.

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NEW YORK MILK CONDITIONS

Conditions in the milk-shipping districts are as acute as ever, or possibly more so. The two big concerns that have the major portion of the business seem to be planning to more fully control the situation. They are most surely working together and have established practically the same prices wherever they go. They must be working in harmony and with a full understanding as to what the other is to do. They have dared to cut prices again this spring for the six months for which contracts are now made. This cut amounts to 7½ cents a hundred, averaging it as it is given out month by month. In other words, there is a cut of five cents during three of the months and ten cents the other three. The heavier cuts are in the months when the milk is in largest supply, therefore the real average is more than it figures by averaging the prices as given out.

This makes the average for the season $1.20. To this is to be added for a test of 3.7 percent, ten cents a hundred, and for conditions scoring 68 points another ten cents is added. Should the farmer get both of these all summer, his price would be $1.40. As both the test and the scoring are in the hands of the dealer, the farmer gets $1.20, $1.30 or $1.40 just as the dealer sees fit to give him. The real average is somewhere under these figures because of less production when milk is the highest. Dairymen are not satisfied, but there seems to be no way for them to help themselves at present. Whether or not the League will come to a commanding position is sometimes discussed, but there is little to help one to determine how it will be. It seems to be a good time to stay by the League, and assist it to do all it can.—H. H. Lyon, Chenango Co., N. Y.

INFLUENCE OF COWS' FEED ON FLAVOR OF MILK

The Department of Agriculture recently reported the result of experiments to test the effect of oats on the flavor of milk. These experiments showed that oats do not have the beneficial effect on the flavor of milk which many dairymen believe. But as corn and bran constituted the ration tested against oats, the public has gained the impression erroneously that the Department recommends the feeding of corn and bran to improve the flavor of milk. Of 50 opinions expressed regarding the flavor of the samples, 25 preferred the milk from cows fed corn and bran. As 16 preferred the milk from cows fed oats and 9 expressed no choice, it does not appear that either ration has any decided advantage over the other.

There can be no great superiority in the bran and corn when one half of the opinions were either indifferent or were in favor of the other milk. In view of these experiments the Department does not recommend the feeding of bran and corn to improve the flavor of milk. Oats, corn, alfalfa hay, cottonseed meal, linseed meal, bran, gluten and other good feeds for dairy cows when properly fed in reasonable amounts produce a fine flavored milk, but there is no substantial evidence that any one of them is superior to any of the others in this respect. The relative prices of the different feeds will determine in most cases which are to be preferred in making up a ration for dairy cows.—Department Circular.

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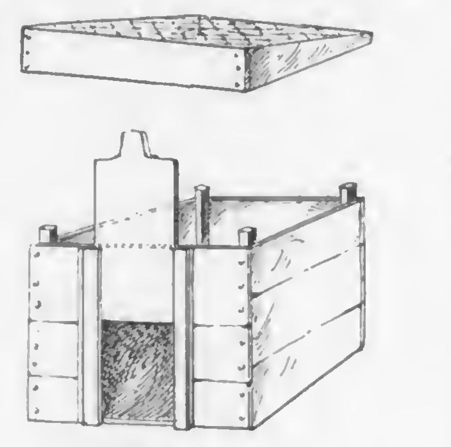
Poultry

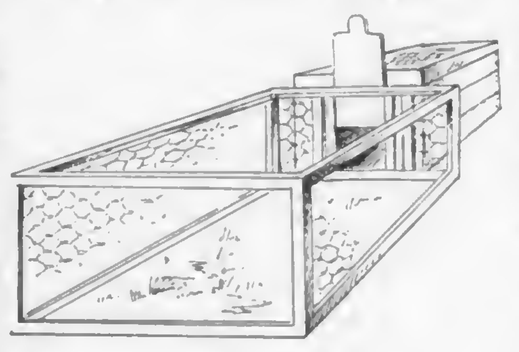
STORE BOX COOPS

We have had such good success raising chicks in our coops made out of store boxes that I am venturing to describe them for the benefit of the Farmer readers. In the first place we tried to get boxes with lids on them that were in as good condition as possible. The kind we like the best are the small boxes, running as short as 2 feet or a few inches over and about 20 inches wide. One has to take what he can get of course, so some of ours are much larger. Of course we wanted some of these large for the larger chicks.



BOX COOP AND COVER.

In making these coops cleats were nailed on the bottom at each end to keep the boxes off the ground. Then pieces were nailed to the lid of the box so as to make a small shed roof. Pieces or cleats were nailed in the corners of the box so that this roof would slip down over them and be held in place if the wind were blowing. These cleats kept any animals from pushing off the roof and getting at the chicks at night. In the front of the box a door was cut and cleats were nailed beside this opening so that a board could be slid down to close the box at night or when shifting the position in the day time. Three holes bored on each side at the top gave ventilation. In the summer time a piece of wire netting takes the place of the door.



COOP AND RUN.

A wire run a yard wide and a yard and a half long was made to set in front of this coop. There are steps at the door of the coop so that the little chicks can run in and out. It is a good idea to make this run of the inch mesh of wire. We lost some fine guineas one year because a weasel got in thru the wire of the run which was of the two inch mesh.

When our little chicks are two days old we put 30 chicks and one old hen in each of these boxes with its run. At the end of a week or 10 days the chicks have been trained to eat and go in at night so we take the hens and condense the broods putting 60 or 75 chicks together. We use a rather small box for them, putting them in a larger box as they grow.

One very nice thing about these boxes and runs is that they are light and may be carried into the barn or shed if cold wet weather comes. Or they may be kept under a shade tree when the sun gets too hot in the summer. We use the runs with them long after the little chicks are running free in the yards. In the morning when the grass is wet from rain or a heavy dew we don't take the coops away but feed the chicks there and let them stay until things dry up a bit. It is an easy matter to pull the runs away and let the chicks out. When we set the coops and runs in the barn we never lost a chick from the rats as would have been the case had we not been able to close our coops at night, and had not had the wire runs to protect the chicks thru the day.

The shed roof was covered with tar roofing paper so the coops never leaked even in heavy rains. When the hatching season is over and the coops no longer needed they are piled neatly away under a shed where they are protected from the wear and tear of the weather. There they are all ready for the next season.—Nevada D. Hitchcock.

APRIL IN THE APIARY

April is the month which marks renewed activities in the beeyard. The bees have been gathering fresh pollen and a little nectar from the maples and elms and brood-rearing is well under way in normal colonies.

At this time the beekeeper should open every hive on the first warm day to learn first, if it has a normal queen; second, the amount of food supply in the hive; and third the strength of the colony. If any colonies have died the dead bees should be crushed from the combs and the hive closed tight to preserve the combs from damage by the bee moth until they are again put in use. Any colonies which are very weak should be encouraged to rear all the brood possible by feeding each evening a half pint of warm syrup made of equal parts granulated sugar and hot water, and keeping the colony warm by extra packing; also by contracting the entrance to the capacity of one half an inch square to retain the cluster heat so that the colony can better protect its entrance against robber bees. Later when the colony gets stronger the entrance must be enlarged.

Colonies queenless at this time are rarely worth saving alone, since all the bees are old, altho it can be done by securing a queen from the south to introduce to the queenless colony. Usually the better plan is to unite the queenless bees with a weak queen-right colony. Greater precautions are needed against starvation at this time than at any other, since, if the colony has a prolific queen, immense quantities of honey are used in feeding the brood.

Nothing should be allowed to check brood-rearing at this time because the crop of honey from clover is in direct proportion to the number of bees reared from this time to June first, other things being equal.

Select a bright still warm day for the spring examination and keep the hive open no longer than is absolutely necessary. It is best at any season of the year that the hive be not disturbed unnecessarily, as each disturbance means an interruption of the hive work and a consequent loss to the beekeeper, but this must not be carried to the other extreme and the hive never opened, this practice being the greater of the two evils.

Resolve that this year you will get from the bees what rightfully belongs to you, a paying return from the time and money invested, but bear in mind that you must intelligently do your part or the bees cannot do theirs.—Elmer G. Carr, N. J. Deputy Bee Inspector.

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Your cholera remedy is without a doubt the best remedy on the market. Last season I lost about 500 small chicks from white diarrhea until I started to use your remedy. So far this season have hatched about 600 chicks and out of 600 I have lost only 4 peeps from white diarrhea, due to the fact that these four did not take nourishment at all from the time I took them out of the machine. Others have used your remedy in this district with the same results.—Edward Reichard, Blandon, Pa.

This remedy for white diarrhea, chicken cholera and all other bowel ailments in poultry, mentioned above, may be secured from the Abbott Alkaloidal Company, Ravenswood, Chicago, 50c. and $1.00 boxes by parcel post. Money back if not satisfied.—Advertisement.

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that the success of poultry raising depends entirely upon the Meat Scraps you use!
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are pure and sweet and carry the recommendation of the foremost breeders. A postal brings you a valuable booklet. Sold direct from 10 pounds to any quantity.
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Coal Burning --- Self Regulating
100 per cent efficient. Economical and safe. Superior to oil burners. Large and small farms are using the Ideal with success. The only system giving perfect satisfaction. Write for booklet describing the
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J. C. Reefer, the poultry expert of 1605 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books

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to all kinds of fowls, pigeons, chicks. Watch 'em thrive. Clean and appetizing. A properly mixed and balanced food for building flesh, bone and muscle without waste. Makes hens lay. Keeps poultry in "pink of condition." Cheapest food in the long run. *Ask your dealer*—accept no substitutes. Write today for free circular describing foods, seeds and appliances
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White Wyandotte EGGS FOR HATCHING. $1.00 PER 15; $5.00 per 100. Write for mating list of prize winning mated pens. W. J. SCHOLL, Bremen, Ohio.

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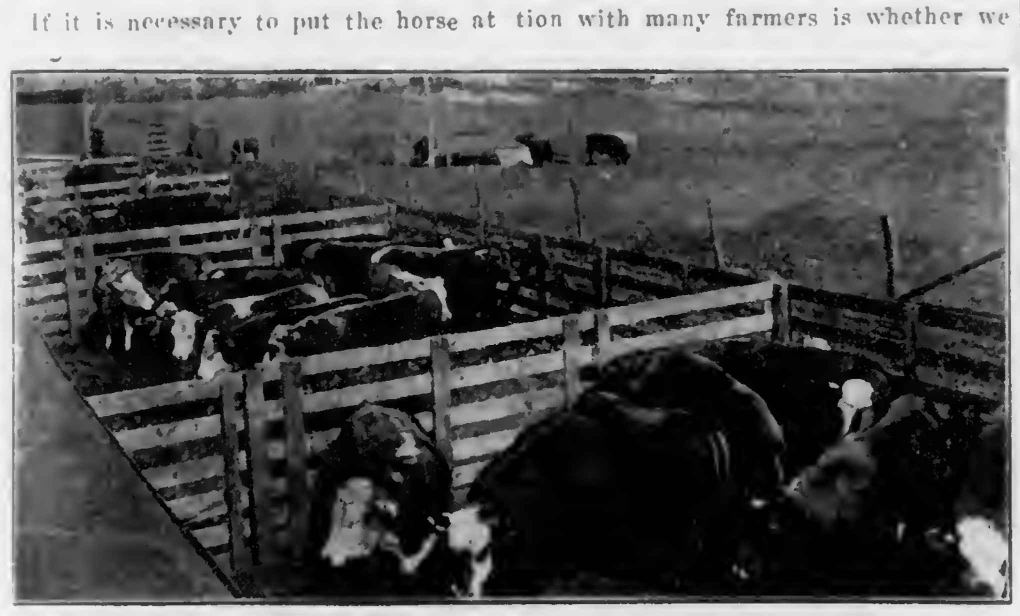
Barred Rocks, Thompson strain; S. C. White Leghorns, Young's, Eggs, $1 per 15, $4 per 100. S. C. White Orpingtons, Kellerstrass ,$1 per 15; Baby chicks, $15 per hundred. Pullets and Cockerels (8 wks. old, 75c each. Wm. J. Sherman, Cambridge, Md.

Live Stock

SPRING SEASONING OF THE FARM TEAM

There is no one thing more important in the management of the farm horse than to get him properly seasoned to his work before he is put into the heavy work of plowing and fitting the ground for the spring crops. At this season of the year the horses are more than likely to be debilitated from a lack of exercise during the winter, and the average farm horse is also burdened with a winter coat which is more suitable to the cold winter weather for which it was provided than to the warm days of early spring.

The horse's muscles are soft and his shoulders are tender at this season and unless he is worked into the collar rather gradually before the heavy work comes on, his future usefulness is in danger of being seriously impaired. Often at this season a horse is strained, overheated or overexerted, until some permanent blemish or unsoundness results; and all at comparatively light work which the horse could endure with ease when in the proper condition.



STEERS ON FEED AT PENNSYLVANIA STATE COLLEGE THIS WINTER.

If it is necessary to put the horse at hard work without sufficient preparation, some of the dangers can be avoided by removing his heavy coat of hair with the clippers, especially if the weather is warm. Then a properly fitting harness is another aid to the continued efficiency of the green horse. Too many farmers forget, a collar which may fit the fat, green horse, may get too large for him before he is worked many weeks, especially if he is put at hard work suddenly and without proper hardening. The result is that thru neglect the horse gets a sore shoulder from which it does not recover for months, and sometimes never without a surgical operation, a disfiguring scar resulting in either case, aside from the discomfort and lessened usefulness of the horse.

Sometimes a careless farmer will allow his horses to wear the shoes which were last set during an icy time in the winter until their toes are away too long and their heels grown over, thru pure neglect. This is a matter which should have attention at all times, but especially in the spring when an unusual strain is placed upon the farm horse thru the pressing labor which is incidental to the preparations for the spring planting. Then again, too great and too sudden change in the diet of the horse may cause indigestion and possibly the deadly colic which is more common in the spring than at any other season of the year for the reason noted.

Of course the horse at hard labor will need a more liberal ration than he has required when not at hard work or when running in the yard, but in making this change care should be taken to keep the horse's digestive system in as healthy a condition as possible. The horse should have some roots if possible at this season for a sort of spring tonic. If you have an abundance, or when potatoes are plentiful and cheap, nothing better can be found for this purpose, and a few bushels of potatoes fed to the farm horses at this season of the year will yield the farmer a far better profit than the same number of bushels sold at prevailing prices for the tubers.

Of course, regular feeding, regular and steady, rather than intermittent work, good grooming, etc., all count in the efficiency of the horse, but at no time to so great an extent as in the spring when the horse is in the seasoning process, and the wise farmer will see that all these conditions are provided which will add to the efficiency of his horses and lessen the danger of their temporary or permanent injury during the trying spring season.—I. W., Crawford County, Pa.

HORSES FOR EASTERN FARMS

I believe that the age of the horse has not passed. The tractor may take the place of the horse on the level land but not on the hilly farms. The question with many farmers is whether we shall buy our farm horses or raise them. I have been farming for 35 years, and during that time I do not charge up one cent to the initial cost of a purebred stallion, for after several years' service I can sell them for cost for breeding purposes, and I have bred my own farm mares too, from them. It is getting more difficult to find men to work on our farms, so we need to do our work with heavy farm machinery. I make a plea for the heavy draft horse that can easily draw heavy machinery, and will not wear out soon. If you are going to do draft work on the farm economically you must have horses specially bred for the purpose.

There should be a good brood mare on every farm, and we also need better horsemen. Breed the best mare you have or can get to the best stallion available. Work mare with foal moderately, but do not over-work her. Give her regular and moderate exercise, and do not feed too much fattening food, but a good strong ration.

One-half the colts lost die from naval infection. The cause is blood poisoning. The best place for the little colt is on the pasture where there is no infection. A disinfected stall is the next best place. It is always wise to wash the naval with a disinfectant. Do not compel the little colt to follow the mare when at work, but keep him in a box stall. Keep oats and bran in the box where the colt can get them at any time. Let him learn to eat out of the box with his mother. If I had hard work for the mother I would wean the colt at 12 weeks, and feed the colt cow's milk, bran and clover hay.—Feeder.

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They Are SO EASY TO WORK SO EASY TO FIX
When you install one of these pumps you get lasting satisfactory service. For 40 years we have been building pumps fitted for wells. When we fit a pump for a well there is no guess work—It is correct.
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Cedar Shingles $7.50 Thousand
And up. 21 inches long. Delivered to your railroad station. Samples and further information on request. All orders shipped subject to approval and acceptance.
Also cedar lath and siding.
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Mention Pennsylvania Farmer.

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Makes Your Harness Last Twice as Long
Perfect Harness Oil—scientifically prepared—makes old harness soft and pliable. Penetrates every fibre. Gives new life and durability. Simply wonderful how Perfect Harness Oil restores wearing qualities to old harness. FREE TRIAL CAN sent postpaid during month of April. Write to Dept.A, Union Leather Company, Providence, R.I.

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Satisfaction guaranteed. Only the choice animals sold for breeders.
Write for prices, etc., or pay us a visit.
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R. D. 1, Hatboro, Pa.

Cheshires THE PIG THAT STANDS UP WELL ON HIS FEET. Fred W. Card, Sylvania, Pa.

Fancy Poland-Chinas. Big and smooth. This is the place to get them Pigs for sale. Write me.
G. S HALL. Farmdale, Ohio.

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C. C. BRAYMAN, Westerlo, N. Y.

Meadowview Berkshires
SIZE TYPE VIGOR
Our Sales have been unusually good for the past few months, but we still have a good assortment of Bred Sows, Bred and open Gilts, Young Boars ready for Service, and Fall and Spring Pigs, in Singles, Pairs and Trios, not akin. Write us your wants, all stock guaranteed, and we make our sales Satisfactory.
Prices Reasonable for Quality.
Foundation Animals a Specialty.
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If you want the best hog
Write us. Our farms are devoted exclusively to the production of Berkshires. Breeders in the following States have been supplied from our great herd: N. Y., Penna.; Dist. Col.; Md.; Va.; N. C.; S. C.; Ga.; La.; Ala.; Miss.; Fla.; Tenn.; Ky.; Texas, and Porto Rico.
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200 Big Type Mule Foot Hogs FOR SALE America's Champion Herd. John H. Dunlap, Williamsport, O

SWINE Large English Yorkshires. Bred sows, lusty fall pigs—pairs no akin. Service boars. Prices right. R. D. Eddy, Cattaraugus, N. Y.

Registered Hampshire Pigs, Choice Boars and Gilts. Write for prices. White Belt Farms, Plainville, N. Y.

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The Kentucky Jack Farm!
We breed and raise the MAMMOTH KENTUCKY JACKS. Buy from us and save the speculator's profit.
Write to-day for price on Jacks, jennets and mules. A large lot to select from.
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JACKS AND MULES
Raise mules and get rich. 18 Jack and Mule farms under one management, where can be seen 420 head fine large Jacks, Jennys and Mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address
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When you want to buy a first-class Stallion come to my farm. You will be surprised at the kind of a horse that I can sell you at $300 to $1200, none higher, all registered, Imported and Home bred. 1, 2, 3, and 4 years old, Belgians and Percherons. Cash or good notes, 1 or 2 years time. I am a farmer and breeder. Line of B. & L. E. Railroad.
LYMAN HUNTER,
Hartstown, Crawford Co., Pa.

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ESTABLISHED 1880 PUBLISHED WEEKLY

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Philadelphia, Penna., April 11, 1914.

MR. PRATT —— A NEW SERIAL STORY

In next week's issue we will commence a new serial story by Joseph C. Lincoln, the inimitable author of sea tales and sailors' yarns. Like all of his stories, "Mr. Pratt" abounds in clean, wholesome humor, touching pathos and keen human interest so characteristic of the Lincoln story, but so expertly blended as to please while it instructs and teach while it entertains. The adventures of two rich New York businessmen who rent an island off the New England mainland in an effort to live the "natural life" and incidently to get away from business cares and avoid their apparent impending romances, are ludicrously related. Mr. Pratt, the old skipper, Nate Scudder and other equally interesting village characters are skilfully depicted. The trend of the romance is carefully preserved and the inevitable happy result is finally consummated. "Mr. Pratt" provides a maximum of wholesome entertainment for every member of the family. You will not want to miss a single chapter. Watch for the first installment next week.

Commodities Act The Commodities Act passed by the state legislature of 1913, requiring that all dry or liquid measures used in measuring commodities sold be marked to show actual capacity, has been rather widely discussed. Certain features of the bill have appeared to be unfavorable to farmers, particularly as it will affect fruit packages. However, the purpose and the main features of the law are right in principle and their enforcement will have a wholesome tendency in doing away with many questionable practices in the marketing of farm produce. The old practice of selling by crate, box or basket, which will be prohibited by this law was subject to much abuse. Such packages might be of any capacity desired and were unreliable as a standard of measure. The old berry box and basket, the retailers' potato crate, the apple package or box did not represent any standard quantity, and the variations found in size and shape of these measures in various markets made them still less reliable. Under the new law all of these packages will have to be plainly marked to show the quantity of the contents. All commodities must be sold by weight, measure or numerical count. The dealer who refuses to comply with these requirements will subject himself to the penalties of the act. The legislature of 1913 made a standard of weight per bushel for various commodities. The purchaser is entitled to receive the number of pounds as specified in that law for the particular commodity purchased, something he frequently did not get under the old system of selling. There has been complaint of injustice in new standards for certain fruits. If they prove to work a real injustice they should be corrected in the next session of the legislature. As the law fixes absolute standards, however, which affect buyer and seller alike it is fair to all within its range of application. What is needed to make the regulation complete is a uniformity of state standards to do away with irregularities in interstate shipments.

Freight Rates The railroads' appeal for a 5-percent increase in freight rates, now being argued before the Interstate Commerce Commission, is developing some highly interesting side lights on methods and practice of so-called big business. There is a general tendency to estimate the business and financial condition of the nation by the prosperity of the railroads, and in this instance many, if not most, of the city dailies as well as big business institutions declared in favor of granting the rate increase even before a word of testimony was heard. The "retrenchment" measures enforced by the railroads in the past few weeks, notably the retirement of 40,000 employes by two eastern roads has further increased sentiment favorable to roads in some quarters, and has even aroused or, possibly inspired, criticism of the interstate commission for delay in granting the request. A careful perusal of the testimony, however, seems to raise a legitimate question as to whether or not the much advertised retrenchment at this time is not enforced for the express purpose of influencing public opinion favorable to the railroads; and if the attitude of many of the influential papers is not assumed for the same purpose. The investigation in this case is of interest to every citizen, not alone as it will affect his pocketbook in the share of freight rates which he must bear, but in securing free and impartial judgment of existing conditions and a judicial decision based strictly upon the merits of the controversy. The public is as desirous of seeing justice done the railroads as it is of having its own rights protected. The time for "swatting" big business simply because it is big is happily past, and the inauguration and impartial decisions of the Interstate Commerce Commission has done as much as any single agency in bringing this about. But this square deal policy imposes an obligation on both parties and it is decidedly the public's business to know the real facts in this case, and to know if present conditions warrant the rate increase or even the curtailment of service now enforced. In direct testimony before the commission, President Smith, of the New York Central, admitted that the annual net operating revenue average for his road was $72,000,000 in the past five-year period as compared with $55,000,000 in the preceding five-year period; also that the net operating revenue was greater in 1913 than in any previous year except 1910. Vice president Shriver, of the Baltimore and Ohio, testified, under direct questioning, that the railroads showed greater prosperity in 1913 than in any previous year except 1910. President Rea, of the Pennsylvania system, admitted that his company earned 9.64 percent on its capital in 1913, above all operating expenses, taxes and fixed charges, but held that the roads should be permitted to earn dividends upon the unearned increment of their property and not upon capital alone. These statements of earnings upon investment under present methods of operation and under existing rates do not appear to warrant retrenchment, much less increased rates. And methods of operation have long been under question. A progressive farmer of this state recently said: "If farmers followed the much lauded business methods of the railroads for five years there would be a mortgage on every acre of farm land in this state." The weaknesses in management he had in mind have been developed in this and in past hearings, including concessions and special allowances in warehousing, switching, ferriage, etc., to special shippers which decrease the earnings of roads by millions of dollars every year. In the operation of a public service institution the question of economic management is as pertinent to increased rates as the question of earnings on investment. The statement of earnings and the indications of prosperity here quoted do not necessarily indicate that the roads are not entitled to higher rates. There are questions of valuation and practice to be determined upon. The commission has ruled that 7½ percent upon capital is a fair minimum earning for roads. But earnings should be based upon legitimate investment and honest management; there should be no interference with thoro investigation and no attempt at influencing public opinion by claims of poverty which cannot be substantiated by actual facts. The number of idle cars has decreased steadily since the first of the present year. Why are men being laid off while business is improving, and especially following the second most prosperous year in the history of railroading? The claims for increased rates seem to be sadly at variance with the established facts.

STATE CAPITAL NEWS

Over 200,000 At Institutes.—Figures show that 201,176 persons attended the Institutes during the past season and it is thought that but for recent blizzards the attendance would have exceeded the record of 209,383 made in 1910. Reports show that the people in rural districts are taking a big interest in this educational work and that the time was ripe for the establishment of the farm counsellor service. The institutes began in 1895 since which time 2,744,362 persons have attended the sessions. Originally $7,500 per annum was available. In 1899 it was raised to $12,500; in 1905 to $20,000 and in 1908 to $22,500 which it has since remained. The average attendance this year was 179 against 163 last year. This year 1,127 sessions were held with 461 days, and 54 lecturers employed. This year supplementing the institutes the Pennsylvania railroad ran dairy cars to 127 places, reaching over 25,000 people and the Lehigh Valley railroad ran a sanitary home car, visiting 75 points and reaching about 6,000 people. The department furnished the instructors on these cars and the work was so successful that it will be repeated next year. The next legislature will be asked for $25,000. An increase in the force of farm counsellors will be sought.

Orchard Work To End.—Spring orchard demonstrations will soon be closed after which attention will be given to supervision of orchards. The interest has been unusual.

To Investigate School Districts.—The State Board of Education will investigate the finances of some of the smaller and poorer school districts of the state, especially in rural counties, with a view to determining their needs. Many of the smaller districts are unable to provide the minimum period of schooling, and as they are also unable because of lack of taxes to afford consolidation, efforts have been made for several years to obtain equalization of the state appropriation. A bill for this purpose presented at the last session was lost and officials of the State Department of Public Instruction and State Board of Education have been working to devise some means of assisting poor districts.

Many New Schools.—The advance of education in the State is shown by the fact that 306 school buildings were constructed in 1913, about 90 of which were large additions to existing buildings and the rest of new construction. In the country districts about 100 were built, most of them on plans provided by the state. A system whereby standard plans can be furnished to all districts desiring small buildings has been put into practical working order.

Road Supervisors Meetings.—Meetings of supervisors have been held in almost every county in the state and the practical test of the new township road law will come this year. The state has offered free advice, plans and supervision to men in charge of township roads. Unfortunately there is little cash available. However, organizations have been perfected and there is a chance for the state to help.

Arbor Days.—Annual proclamation of arbor days has been made for this year and it is also announced that the State will set out over three and a half million trees. The arbor days are to be April 17 and 24 and in addition to urging educational work to bring to the attention of children the importance of planting trees steps will be taken to instruct them in the economic value of birds and animals, especially in the fields. The proclamation contains several useful suggestions.

Watch For Glanders.—The State Veterinarian has issued warning to owners of horses against outbreaks of glanders this spring, advising communicating with a veterinarian in case of suspicious symptoms. The law requires such cases to be reported to the State Veterinarian and horses and mules afflicted with the disease are to be killed, a limited appraisement being allowed if they have a market value. The state will give its help in cleaning up suspicious cases or centres of infection if report is made promptly.

Traction Licenses.—Figures show that 257 tractors have been licensed. This figure includes the traction engines over whose regulation many owners and the highway authorities are at odds. A determined effort to secure a change in the law will be made by the organization of traction engine and implement men now being formed in various parts of the State. Licenses issued to automobiles thus far aggregate 56,000, 4,350 being issued to solid tired vehicles or trucks. Over 5,400 motor cycles have been licensed. The total income from automobile and similar licenses thus far aggregates $700,000 for this year alone. And all of this must lie in the Treasury instead of being spent on repair of roads because of lack of specific acts by the legislature.—Hamilton, Harrisburg, April 6.

NEW JERSEY FARM NEWS

Fair News.—The old fashioned county fair may be brought into favor again. The farm management section of the National Department of Agriculture has come to the conclusion that the county fair is one of the best and most direct methods of reaching the farmer with the information the department wishes to distribute among them; hence the department is arranging to send out lecturers and demonstrators, to attend these fairs and to show the farmers the best way to do all kinds of work.

Farm Life Problems.—The actual number of cultivated farms in New Jersey has decreased about 1,500 in the last ten years, due in large degree to the taking of farm lands for building lots and putting dwelling-houses on them to accommodate those who do business in large cities but prefer to live in easily accessible rural or semi-urban locations. One plausible explanation for this is the lack of amusements on the farm. Home gatherings, spelling bees, debating societies, dancing parties, social meetings and the like, may furnish a solution of this problem.

The Mercer County Farm Bureau.—John H. Hankinson, Mercer County farm agent, in company with G. A. Billings, agriculturist of the National Department of Farm Management, has been making some farm surveys in the county. It is too early to draw any general conclusions and the particular results are, of course, strictly confidential. The survey recommends all farmers to top-dress their timothy sods which had not been top-dressed with manure, with 300 pounds of a fertilizer formula containing about 8 percent ammonia, 7 percent available phosphoric acid and 5 percent potash. It is important that this fertilizer be evenly distributed on the grass early. Hog cholera has appeared in Mercer county, and the farm bureau has sent out the following advice: "Keep your pens clean, use plenty of disinfectant, and have before your pigs a box containing equal parts of yellow sulphur, salt, bone meal and coal ashes." Much can be done to keep the disease in check by notifying promptly the farm bureau agent.

Mercer County Board Meets.—In his address before the thirtieth annual meeting of the Mercer county board of agriculture, President J. T. Allinson declared that every 35 cents' worth of food is separated by about 65 cents worth of transportation and commission men's charges, from the mouths it is ultimately to feed. President Allinson declared that every department in the experiment station and agricultural college is retarded because New Jersey pays less to support these institutions than any state of her population in the country. In spite of being constantly hampered, he added, the institutions are equipped with the strongest staff of scientific men found in any college in the United States. Resolutions were adopted expressing the sentiment of the Board concerning the pending appropriations for the Experiment Station and Agricultural College at New Brunswick.

Corn Contests.—Leaders in agricultural education in Monmouth county plan to interest 500 boys in an agricultural contest. Separate contests, with boys less than 15 years old and others between 16 and 20 years, divided into classes, will be conducted, with the growing of corn and potatoes as their aim. Special contests for different kinds of vegetables will be conducted also in connection with the Monmouth county fair association.

Mosquito Extermination Work.—Union was the first county in New Jersey to take advantage of the act of 1912, authorizing the creation of mosquito extermination commissions. The work that has been done has resulted already in increased comfort and freedom from disease, additional useful agricultural land has been secured from drained areas, and the increase in property values amounts to 25 percent in communities known to have become free of mosquitoes, an increase thru the State estimated to be $26,000,000. The county is divided into districts, each in turn being divided into smaller districts, and an inspector assigned to each one.

Farm Demonstration.—Under the auspices of the Sussex county farm bureau, public demonstrations of pruning and spraying fruit trees were given by Professor Farley of the State experiment station. These were attended by many farmers, who were well repaid for their time. Professor Alva Agee, State superintendent of farm demonstration, has appeared before the Bergen county board of freeholders in the interest of the appointment of a county farm demonstrator. He suggested that if the board appointed such a demonstrator, it should appropriate $2,000 for salary and expenses, one-third of the cost of maintaining the department to be paid by the State. Burlington county has decided to request the board of freeholders to make an appointment of a farm demonstrator. Senators Ackley, Smith and White have been appointed a committee to investigate the need of an agricultural and horticultural experimental station in South Jersey.—D. T. H.

NEW YORK LETTER

City Farm Laborers.—Thus far three carloads of laborers from New York city have been shipped up state and all have found employment. The last group was sent to Sodus, Wayne County. C. W. Larmon, of the state labor bureau, reports the first carload landed at Fonda are all employed and seem contented. Bad weather has delayed the despatching of more groups and the first lot was sent out too early.

Bureau of Markets.—If the Governor approves, we shall have a law establishing a Bureau of Markets, with a commissioner in charge, appointed for six years, at $6,000 per year. He will investigate cost of food production and marketing in all its phases; aid organization of co-operative societies among producers and consumers; advise in establishment of local markets operated by co-operative companies; make rules and regulations for grading, packing, handling, storage and sale of food stuffs within the state; investigate delays in transportation and initiate proper proceedings to prevent restraint of trade or unlawful combinations to fix prices. The bill also provides for the establishment of auction markets and licensing of auctioneers.

Rockefeller Gives $1,000,000.—The Rockefeller Institute for medical research has announced the gift of $1,000,000 by J. D. Rockefeller to be devoted to the study of animal diseases. James J. Hill has recently pledged $50,000 for the special investigation of hog cholera which is said to kill $60,000,000 worth of swine a year, in the northwest alone.

Several Items.—The New York Electric Railway association is planning to develop agricultural traffic along its lines which reach 500 rural communities with 1500 miles of road. The department of agriculture has recently issued a circular or pamphlet entitled "A Manual of Co-operation" which gives some important information on the organization of co-operative societies. The New York commissioners to Europe for the study of farm finances have submitted a report of their investigations in a volume of over 300 pages, finely illustrated.—D.

MARYLAND NOTES

Dairies Combine.—Four of the largest city dairies of Baltimore formed a combine last week to put out milk, cream and ice cream under one operating head. The four dealers sell 10,000 gallons of milk and cream and make 1,500 gallons of ice cream daily. It is proposed to build a large central plant, using an unusual amount of glass so that all manipulations can readily be viewed by visitors. School children will be invited to learn how milk is prepared, and the general public will always be welcome.

Good Roads Bill Passed.—The legislature has passed the good roads bill and the Governor has signed it. The appropriation is $1,250,000.

Cooling Station Stimulates Dairymen.—Since the establishing of a cooling station at Queen Anne, the farmers near in Caroline, Talbot and Queen Anne counties have added a number of dairy cows to their herds.

College Demonstration Work.—The Maryland Agricultural Experiment Station has been giving public demonstrations of spraying and pruning trees in Harford county and other parts of the State.

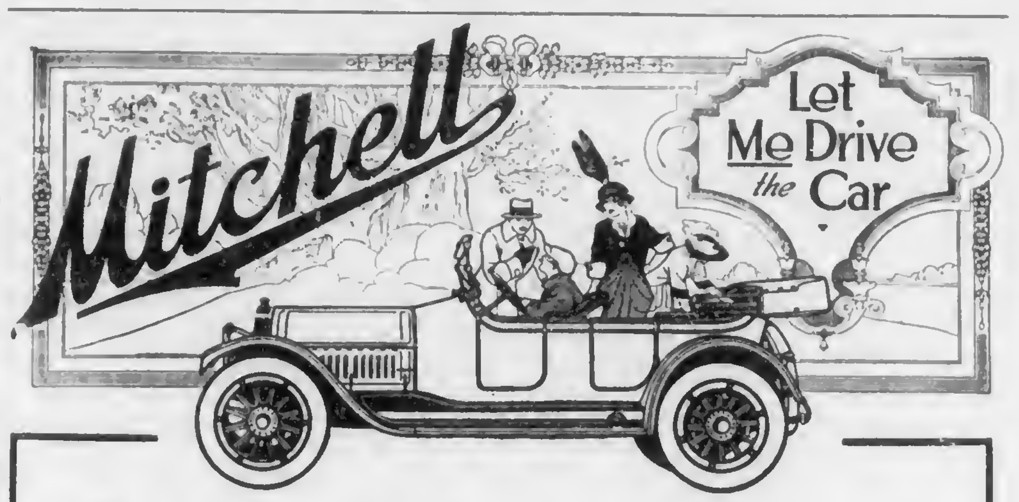
VALUABLE FREE CATALOGS

Book of Bargains.—The Book of Bargains now being issued by the Manufacturers Outlet Co., Dept. 291, Buffalo, N. Y., is just what its name implies. It offers bargains in a full line of household, builders and farm supplies. All goods are strictly new, purchased from surplus stock of over-loaded or hard-up manufacturers and sold at factory cost or below. A partial list includes lumber, roofing, plumbers' supplies, farm tools, steam and hot water furnaces, pumps, field and garden implements, fencing, boots and shoes, tools, harness, wagons, buggies, trunks, dishes, carpets, rugs, furniture, curtains, stoves, etc. The catalog is well printed and fully illustrated. It will be sent free upon postal card request to the above address.

Potato Machinery.—Time for planting potatoes will soon be here when every hour will mean money to the busy farmer. Value of time as well as thoroness of work require the best modern machinery. The O. K. Champion line of potato machinery fills every want from the beginning to the end of the potato season. A new catalog lists and describes this famous line of tools, including seed cutters, planters with or without fertilizer attachments, cultivators, spray outfits, diggers, sorters, and carriers. This line of tools is backed with a strong guarantee of quality and workmanship. The catalog will be sent free upon request. Address Champion Potato Machinery Co., 91 Chicago Ave., Hammond, Ind.

Lightning Rod Protection.—A new booklet issued by the International Lightning Rod Co., Department P, South Bend, Ind., contains a discussion of the theory and practice of rodding buildings. It gives illustrated directions for putting up rods and lists a full line of equipment. The booklet is free upon request to the above address.

A New Separator Idea. — The new 1914 Model United States Cream Separator has a non-rusting sanitary liner which keeps every drop of milk from touching any cast-iron or steel surface that is not removed and cleaned after using the separator. This liner is easily and quickly removed and washed with the other parts. It fits snugly into the bowl chamber and is held rigidly in place by a locking device. The new 1914 catalog gives full particulars. The catalog is free to our readers who write Vermont Farm Machine Co., Bellows Falls, Vt., for it.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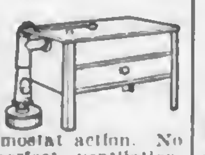

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Most attractive and useful article ever presented. Operated with one hand; gives an instantaneous light. No battery, non explosive; does away with matches. Lights your pipe, cigar, cigarette, lamp, gas jet, etc. Dandy thing for the end of your chain. AGENTS WANTED EVERYWHERE Write for wholesale terms & prices. C. G. BRANDT MFG. CO., 148 Duane St., N. Y.

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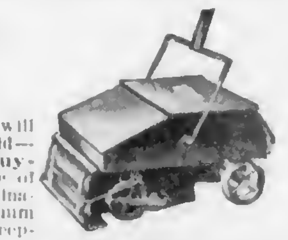

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Grange

HAS OUR LATE INDUSTRIAL AND POLITICAL DEVELOPMENT UPLIFTED THE RACE?

In a former article we took a causual study of the changed conditions of society that have destroyed the personal liberty of the individual to use liquor, and thus make him unfit to take his part in the great composite work of society. We now want to trace the consolidation and centralization that our industrial and political life has undergone, and inquire as to whether that development has benefited the race.

If you go back to colonial days you see the good housewife take the raw wool and proceed to wash, card, spin and weave it into cloth, and in many cases, in turn cut the cloth and make the garments needed by each member of the household. From the shearing of the sheep or the harvesting of the cotton until the garment was hung in the closet, the operations were almost entirely individual. What a marvelous change machinery has wrought in the consumation! Each machine means a different operator.

NORTH GHENT (Bradford Co., Pa.) DEBATING TEAM.
From Left to Right: Ira Holcomb, Edna Farrell and Vern Struble.

Go into one of the large abattoirs of today and note how each man along the line adds his few expert strokes until in an incredibly short time comparatively, the living animal is converted into food and the by-products prepared for their several places in trade. Very different from the custom where a single animal is slaughtered on the farm or by the small butcher. It is needless to multiply examples. In almost every line of industrial work this piece-work system has supplanted the master mechanic who at one time began with the raw material and ended with the finished product.

In our political life we have seen a like consolidation. In our early history our laws were few because each was a law unto himself, except where interference with each other demanded regulation. As population became more dense and cities took the place of settlements, laws multiplied until no one now-a-days pretends to know half the laws under which he must live. Each of these legal regulations supplants what was once a personal right and privilege.

But our object is not so much to bring out the fact of the condensation. That is self evident. Let us study the reflex influence this loss of individual decision and initiative has had on the character of our people. It can hardly be denied that in this piece-work system we have lost a great character builder in comparison to the master mechanic system. In the parlance of today, it takes more head to make a wagon than it does to make a spoke for a wagon wheel. The mind, as it turns to the making of each part, naturally and inevitably gathers judgment, decision and initiative much more rapidly than when it oversees one action day in and day out.

And in our political life, when the citizen is left with so few points in which he is the arbiter of his own destiny, the tendency is to give up being a sovereign and consign to the public official the responsibility of righteous government. It is a decidedly doubtful proposition that this centralization has been either necessary or beneficial. The complicated political situation has grown to an extent at least from the industrial trend.

The excuse has been made that this development has lessened cost of production and lowered the price to the consumer as well as improving the quality of the output. I say excuse, because it was necessary to offer some reason or excuse for breaking down these thousand small operators and creating one large operator. But the facts of experience have hardly borne out this assumption. It used to be that we could get good tin; now it is nearly impossible to do so, and the price has not followed the sliding scale of quality. The decadence in the quality of tools and machinery is proverbial, but the rise in price is almost equally so.

I think it may safely be said that the only benefit that has come to the consumer in lowering of price has been the result rather of new application of machinery than of consolidation; and that we have lost much in character by this transition is proven by a comparison of the operators of a large mill or factory with an equal number of persons doing business in the same line in a small way. The effect of competition makes the small operator study and think and plan, and that brings power, self reliance, stability and character. The elimination of competition breeds monopoly, and monopoly engenders greed, pride, domineering tendencies, lack of sympathy, sloth and carlessness in capital and human machines, in labor set to work out the same piece unendingly. While a certain amount of this centralization of effort is necessary, much of it is false and foolish, and it is a no more herculean task to accomplish a measure of decentralization and a restoration of individuality in the business world than it is to maintain a passably just relation between a powerfully centralized capital on the one hand and a powerfully centralized labor on the other hand.

And just in proportion as our civilization shall work out and restore the power of individuality in our industries will it restore the power of the individual in our political life, and thus again give to the sovereign citizen the place he was intended to hold in the economy of our government.—John A. McSparran.

BRADFORD COUNTY GRANGE DEBATES

Grange work is booming in Bradford County. A new grange has just been formed at Ghent, Sheshequin Township, which makes four granges in that township. We believe that is a record-breaker for any township in the state. If any one can beat it, let us hear from you.

The Grange at North Ghent has recently completed a series of debates which may be a help to some other Society. James VanCise is master of this Grange and Frank Payne secretary. Last fall Bro. Fred Fredericks was appointed as manager of debates and a debating team consisting of Bros. Vern Struble and Ira Holcomb and Sister Edna Farrell was chosen.

The first of a series arranged with the Rome Grange came off at North Ghent church and was won by the North Ghent team, the question being "Resolved that Life Insurance is as important to the farmer as fire insurance." The second number was given at Rome and was decided in favor of the Rome team. This question was "Resolved that Woman Suffrage would tend to purify American Politics." The third question "Resolved that diversified farming is of more importance to the farmers of Pennsylvania than specialized farming," was decided as a tie and consequently another debate will be held to decide the championship.

The Rome grange picked three for each debate from the following members: Myra Drake, Mrs. Clark, Clarence Vought, Frances Plott, Mrs. Pierce, Mrs. Dighton Clark, Robt. Cook and John Joyce. All these meetings were well attended and great interest was shown by all the members, whether directly interested or not.—L. C. Burroughs, Bradford Co., Pa.

NEW YORK'S NEW RURAL SCHOOL LAW

New York has a rural school bill which will place rural school districts on a par in several important particulars with city schools. The general provisions of the law are to the effect that the commissioner of education may lay out districts, of his own motion, suitable for central high schools anywhere in the state at any time, and in these schools there shall be taught the studies usually pursued in village or city high schools, as well as agriculture. These new school districts are to be laid out independently of the boundaries of existing school districts, towns or counties, and after a district has been laid out only those residing within the boundaries of the said district shall be permitted to vote on the proposition of establishing such a central high school.

Fifteen taxpayers may call for a meeting at which a vote shall be taken as to whether such a school shall be established and the school district shall have all the privileges of a union school district. It will receive from the state the same moneys that the territory included in it received when divided into several districts, and also the allowance made for high school instruction and for instruction in agriculture where such schools are maintained and instruction given.

This rural high school law is one of the most valuable acts of the state legislature for many years. It gives the country boy and girl educational advantages at home equal to any they would have in the city with the additional advantage of receiving instruction in the things with which they should be familiar and with which so large a majority of them will have to do in the future. These schools will also greatly tend to improve social conditions and will furnish social centres which will be attractive to the pupils and tend to build up a home pride in their communities and in rural affairs.

These schools will be directly and solely under the control of the farmers of the district thru a board of education chosen by themselves. They can make them what they will, and that they will make them such as to serve the interests of the farm and the locality wherein they are located, goes without saying. The general features of the plan of these schools have been approved by the commissioner of education at Washington. Ohio, we believe, has similar schools and Minnesota, Massachusetts and Rhode Island are engaged in a movement looking to their establishment. Let the work proceed. —D.

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COST OF EARTH ROAD BUILDING

Mr. Henry Wedge, of Tioga Co., Pa., questions my statement of cost of building earth roads according to plan described in my article in Pennsylvania Farmer of January 17th, 1914. The article should read "my estimate for upkeep (instead of contruction) on such a road would be $100 per mile for first year, and $25 per year for each subsequent year"; to be dragged as often as needed to keep in perfect condition. I did not intend to make any estimate on material or actual construction of road, but I think in Crawford County, where our soil is largely clay loam and gravel it can be built for much less than Mr. Wedge estimates. I can dig a mile of that ditch in four days with 4 good teams and the right kind of a road machine, and eight days' work with pick and shovel will grade up the bottom of ditch, ready for tile. It is a short job to lay the tile and after the stone is filled in, the same team with road machine will replace the dirt in half the time it took to dig the ditch. A large part of the stone in Crawford County can be had convenient to the roads. Cobble stone from as large as a man's fist down to coarse gravel can be used, and is to be found in great abundance in gravel banks, and along streams.

If people could only be made to realize the great advantage both in expense and durability between a properly made dirt road and a macadam road, they would soon make their choice. All we need is a few well-built samples of dirt roads. We already have the samples of macadam, and have not only tried them, but have worn them out in about three years. I thank Mr. Wedge for calling my attention to the matter, as it was misleading and my only object in taking up the subject was to call attention to the great importance of building the most durable roads at the least expense.—W. R. McGill, Crawford Co., Pa.

THE SCRAPBOOK

Arrange your Pennsylvania Farmer clipping in a scrap book and you will have a valuable record. The old idea of keeping the weeklies filed in a closet is a poor one. Sometimes just the very issue that contains a subject that you desire to refer to is misplaced or lost. A systematic method overcomes that.

I have tried out several systems and all have advantages. One method is simply to pack each week's paper upon those last received in a closet or drawer. But it is a difficult, tedious matter to find what one desires at the time. In the next method a note book memorandum was kept to post the "issue" and the page of those articles I believed would be required for reference later. For instance: The notebook was indexed alphabetically. "Silos" appeared in issue October 10, page 6, which was posted on index page "S". Of course by this method each number of each years' issue must be kept intact. However, it takes considerable time to refer to the issue we desire.

The system I have used for some time has given me the best results. I use a notebook 16 inches long and 10 inches wide, containing 200 pages. One whole side of a page is given to a letter in the aphabet. That is my index. The last twelve pages are given to the 12 months in the year for "things to do." For example; the month of March is lamb market time, egg setting, feeders begin to get their nishing feed, etc. Each of these operations needs special attention which suggestions in my note book call to mind at the proper time.

Now each week my Pennsylvania Farmer comes to me I read it for the articles in which I am interested. Then I cut out those articles and paragraphs of direct interest to me and paste each one under its particular title in my scrapbook, and post the page number in the index; poultry under "P", orchards under "O", etc. This method suits my purpose best. If I desire to get information on any subject I locate in the index the page, turn to it and I may have a dozen or more articles on the question. After "cutting" out the articles and paragraphs, I store the papers, or what remains, in a box I keep for that purpose. For those who would keep a more elaborate "clipping" system, I would suggest a series of separate scrapbooks covering the subject of particular interest; each book to contain separate subjects. That system gives a more perfect method and soon one has accumulated a bookshelf full of knowledge of subjects under different covers.—The Country Doctor.

New Hampshire Grange Honored.—The state grange of New Hampshire, and not less the state itself, has been honored by the appointment of State Overseer Andrew L. Felker as Commissioner of Agriculture under the new regime. Heretofore there has been a state board of agriculture but this office was abolished by the last legislature and the office of commissioner of of agriculture was established. The position carries with it a salary of $3,500. He has been an active member of the grange for 17 years.

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Household

GIRLS' GARDEN AND CANNING CLUBS

(Continued from page one)

Grading, Crating and Marketing

The girls found it very profitable to grade and crate their fresh tomatoes since they were able to sell a bushel crate for $1.50 all thru the summer when the local market was only paying 50 cents a bushel. For their late tomatoes they received $2.10 per bushel crate.

A good market can generally be found if it is sought. We found that our best market for the fresh fruit was the dining car service of the various railroads, as they buy only first-class goods and pay accordingly. Most of the graded, fresh tomatoes were sold to the dining car department of the D. L. & W. Ry., which also gave the girls an order for 100 dozen of their No. 3 cans of tomatoes at 10 cents per can. Several cases of canned tomatoes were also shipped to an Employees' Co-operative Association at Passaic, N. J. The girls received on an average 10 cents per No. 3 can while some of them were able to sell that size at two cans for 25 cents. Among the other tomato products canned by the girls are catsup, chili sauce, red tomato preserves, green tomato preserves, green tomato pickles, chowder, piccalilli, green tomato catsup and French chow chow. Some of the girls sold catsup at $1.00 per gallon.

Prizes Awarded on Farmer's Day

On November 22nd, in connection with a Farmer's Day and the Boys' Corn Show at the county seat, the Club work closed for the year. The essays on "How I Grew My Tomato Crop" were graded and up for inspection. These were illustrated with kodak pictures and were very interesting. Each girl also exhibited four cans of tomatoes canned in tin and one canned in glass. One tin can belonging to each member was opened and the quality judged by a chosen committee. The girls, together with their club leader, also had an exhibit of the various fruits and vegetables which they had canned during the season.

Did the Club Work Pay Financially?

Counting all the cost of production, cans, etc., a No. 3 can of tomatoes cost the girl who raised and canned it about 4½ cents, thus making her a profit of from 5 to 8 cents per can, and a saving of from 8 to 11 cents per can for what she canned for home use and did not have to buy at the grocers. Every girl in the Sussex County Garden and Canning Club this year made a profit. After paying all expenses and taking out 10 cents per hour for their time, the average clear profit made by each girl was about $33. The average amount of money actually paid out for supplies by each girl in the club work was $10.69 and the average number of hours spent by each girl in actual work was 85, while each received an average of 49 cents for every hour of time spent on the work. Considering that the ages of the club members ranged from 10 to 18 years this was a very fair return for time expended as it would be receiving at the rate of $4.90 per 10-hour day.

The girl who received the first prize in the county, Miss Lucy Bale, made a total profit of $71.58 from her 1-10 acre. She sold $8.80 worth of fresh tomatoes, $105.30 worth of canned tomatoes and used $9.15 worth in the home, making the total value of all products $123.25, at a total cost of $51.67. She canned 782 cans in tin and 223 cans in glass. As a prize she was given a free trip to Washington, D. C., where, with scores of other champion club members from 34 states who were guests of the United States Department of Agriculture, she spent a week in seeing the sights of the Capitol. Miss Lucy received first place among the girls of the Northern Central and Western States as well as the Championship of the State of New Jersey. She canned over 1,000 cans of tomatoes from her 1-10 acre plot. She is a sophomore in High School, and Sussex County as well as all New Jersey may be proud of what she accomplished.

An All-around Training

Not only did the Club work pay financially but we feel that this is only one side of the work. The value of undertaking and completing the work as a club member cannot be estimated, as it trains the whole child. Each girl who carried the work thru to the end, besides earning a fair profit and whatever she may have obtained, won a National Club pin as illustrated at the head of this article, given by the Sussex County Farm Bureau. Every part of the little pin has a meaning and explains the four-square education which the Club work stands for. The background of the pin is a book which signifies the need of an education and definite knowledge in order to do any work well. The word "Demonstrator" means that every club member is to be a demonstrator of the best known methods in agriculture and is to follow the instructions furnished by the Department of Agriculture for a period of not less than one season on a 1-10 acre plot in the Garden and Canning Club work.

The "H" seen on each petal of the four-leaf clover stands for the equal training of the Head, the Heart, the Hands and the Health. The four-square education trains the Head to think, to plan and to reason; the Heart to be kind, to be true and sympathetic; the Hands to be useful, helpful and skillful; and the Health to resist disease, to enjoy life, and to make for efficiency. As Prof. Benson puts it the 4-H education of the Club work "makes better citizens morally, intellectually, and economically."

TEACHING HOME CRAFT TO GIRLS

To manage the household is the average woman's lot, but most girls, the land over, do not attend homecraft schools as their brothers attend, the land over, agricultural, technical or law universities. Therefore our schools should train our daughters for their inevitable task.

Sixty-five percent of our girls marry previous to the 30th year. The other 35 percent enter careers of business or professional type. The usual high school program accords preparation for the latter, but for the girls who are to become housewives and mothers, this education is an uncompleted story. They don't learn the last chapter, the important chapter.

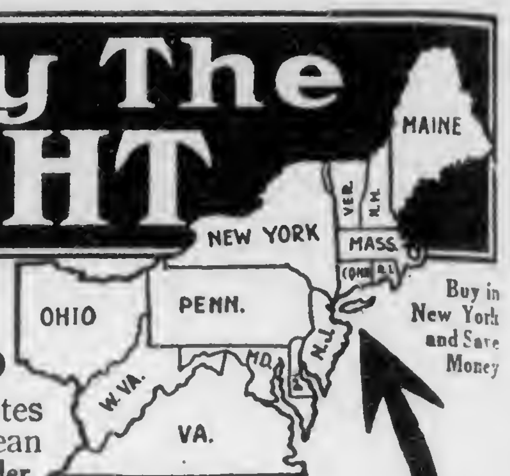
The majority of parents who desire their daughters to receive a high school education cannot afford to send them to college or training schools afterward. With yet other girls it is a case of personal disinclination to pursue their studies, either for want of studious instincts or because of the early prospect of marriage. They are not, in the majority of cases, properly prepared for their business, unless their mothers happen to be excellent housewives and have had the wisdom to impart their knowledge to the younger generation. Lawyers send their sons to law school, doctors' sons go to medical schools, farmers' sons go to agricultural colleges. Why expect the mothers alone to teach housecraftship to the daughters?

Dr. Rowe of New York has for some time past been calculating how to best fill this great gap in American home life. The plan has been accepted most enthusiastically by the mothers of his pupils and has received the approval of the Board of Education of the New York high schools. The first term saw 80 girls in the class, eager to prepare themselves for their life work. In this homecraft course girls are taught the art of reading, and their taste for and appreciation of real literature will be developed by the most competent instructors of the day.

Among the other required subjects are biology, domestic science and art, drawing, music and physical training, for the first year; the same studies with hygiene and sanitation in addition for the second year; household management and mathematics for the third year, social efficiency and essentials of conduct for the fourth year. The elective subjects include household arithmetic, vocation study, study of vocational fitness, current history, English history; clothing, its care and remodeling; German and French for the first year, millinery, household chemistry, European, American and ancient history; history of women's work, history of arts and crafts, current history and again German and French for the second year. For the third year applied design, applied physics and music are added, and economics, fundamentals of legal procedure, physiology, bacteriology and sanitation, household design and decoration complete the course during the fourth year.

The freedom in electives is a distinctive feature of this course. It aims at providing for the individuality of each student, and at the same time, thru the required subjects they receive the well-rounded training desirable for those who are not able to go further than the high school course. Moreover, the course has been so arranged that the girl who is unable to remain more than one year may receive some preparation for homecraft, which will better fit her for the duties of home and motherhood.

Every high school in the land, in rural districts and city communities, must sooner or later come to the homecraft plan of instruction, for our daughters must be fitted for life and its task if the race of American girls and mothers is to be advanced.



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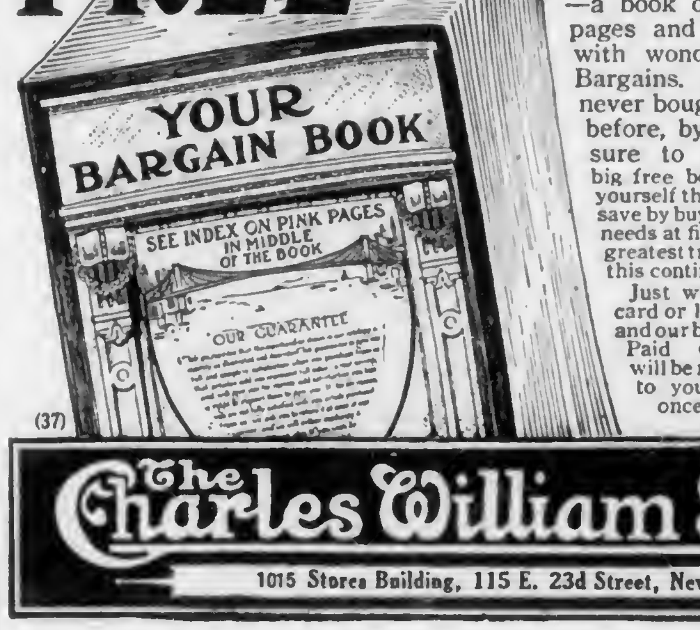
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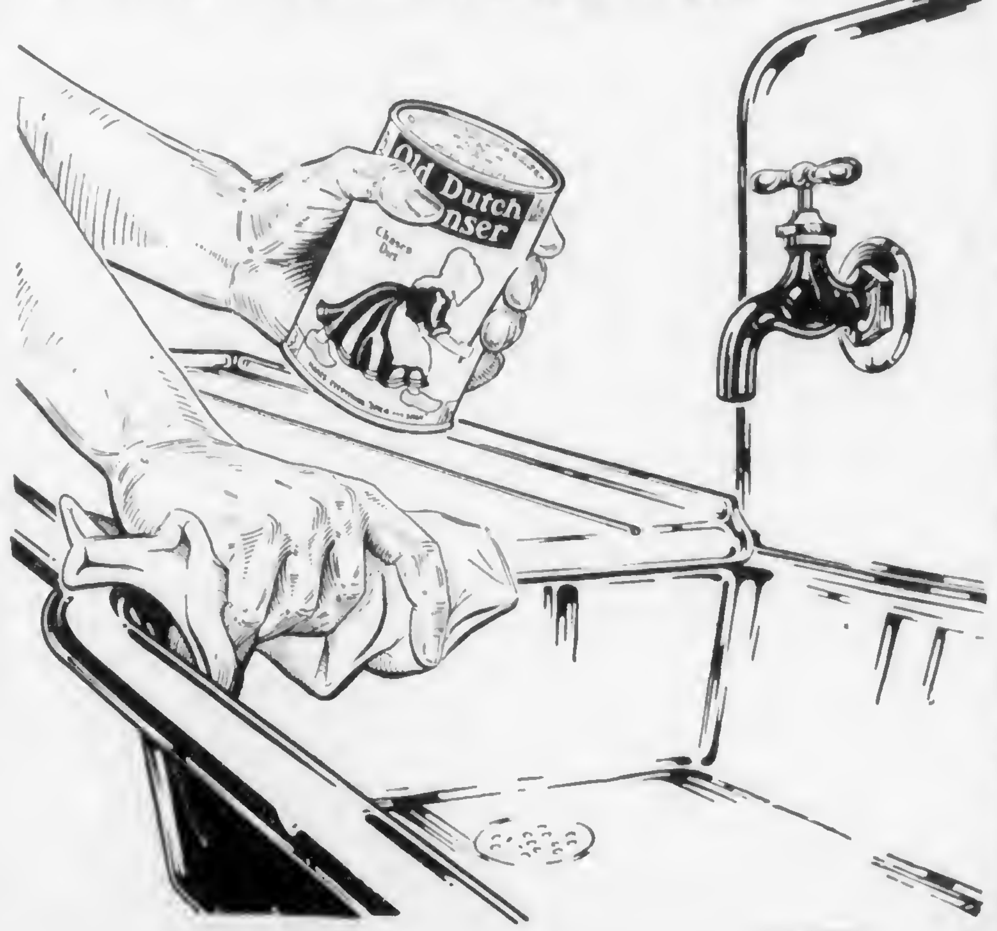
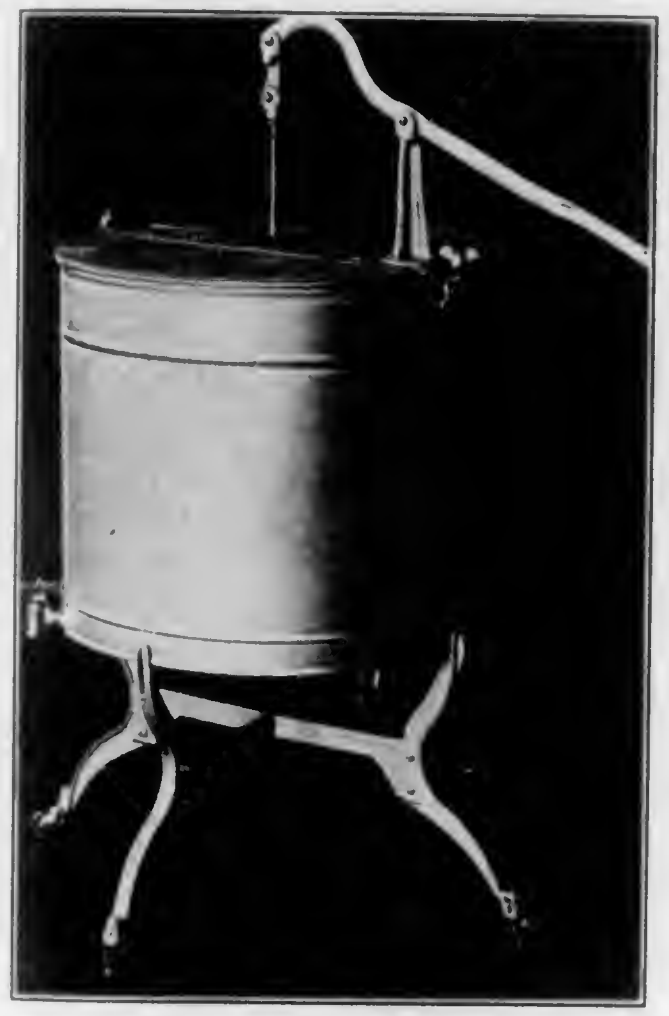


A MECHANICAL DISHWASHER

At last here is something practical towards increasing kitchen efficiency by reducing the time spent in dishwashing. The other day I went to have some duplicate door keys made. The key maker said that he could make half a dozen as quickly as he could make one. I thought to myself "If we housekeepers could only combine equally well many of our motions, how much better it would be for us and our families!" Here is a piece of kitchen equipment that does this very thing—it washes 25 or 50 dishes with the same motions that it would require to wash one or two. This is the way that it does it:



MECHANICAL DISH WASHER.

Pile the glasses, silver and general table dishes into separated wire racks, with their edges obliquely toward the tube in the center. Pour in hot suds, the suds having been made by means of a soap shaker, which should be a part of every kitchen equipment. It consists of a wire container, about 1½ by 2 by 3 inches in size, for holding small pieces of soap. It has a long handle by which you shake it about in the water and in a few seconds make a fine suds. Personally I like the naptha soaps best for dishwashing as they seem to clean the dishes more readily because the naptha cuts the grease better than the soaps ordinarily used. You will need for an ordinary family size dishwasher of this type about 8 quarts each of hot suds and of rinse water.

Pump the wire baskets up and down several times by means of the handle. This forces water thru the holes in the tube against the dishes, and also souses the suds well against them on all sides. Let them stand and soak a few minutes (about five will do) in the hot suds, then pump again before draining off the suds. This is drained into a pail or preferably into a floor drain to avoid lifting and carrying as much as possible. Rinse out the dishwasher with a dipperful of hot water then pour in boiling water and pump the basket up and down in this to thoroly rinse the dishes. Drain off this water, and let the dishes stand and dry themselves in the baskets, which they will do very nicely because they are so hot. Of course the glasses and silver will have a better polish if you take them out and polish them with a cloth, but the busy farm housekeeper can omit this on occasions. Thus, you see, a large number of dishes are washed and dried with the same motions. Is it not worth while to an overworked woman? The cost of such a machine for an ordinary family is $12. Your men folks will pay considerably more for a machine that is not used three times a day every day in the year. It is time that farm kitchens use more labor-savers like this. It is on casters so that it can be moved easily to the stove to receive the boiling water, to the drain for emptying, and to the table or the dish cupboard for putting the dishes away. It does all it possibly can to relieve the busy woman. No restaurant or hotel or club thinks of getting along without a mechanical dishwasher. The managers of such establishments say that they save their cost over and over in economy of time and in reduction of breakage, which is very great with hand washing and handling. The machine described herewith is constructed on the same principal as the large hotel-size dishwashers.—Harriet Mason.

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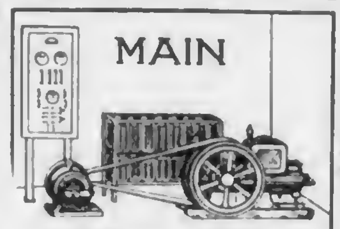

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Winston of the Prairie

By HAROLD BINDLOSS

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CHAPTER XXVII. (concluded.)

Still, he was almost too cold for any definite feeling but the sting of the frost, and it was very stiffly he stood up, shaken by vague emotions, when at last the horses stopped. A great door swung open, somebody grasped his hand, there was a murmur of voices, and partly dazed by the change of temperature he blundered into the warmth of the hall. The blaze of light bewildered him, and he was but dimly sensible that the men who greeted him were helping him to shake off his furs, while the next thing he was sure of was that a little white-haired lady was holding out her hand.

''We are very glad to see you back,'' she said, with a simplicity that yet suggested stateliness. ''Your friends insisted on coming over to welcome you, and Dane will not let you keep them waiting too long. Dinner is almost ready.''

Winston could not remember what he answered, but Miss Barrington smiled at him as she moved away, for the flush in his face was very eloquent. The man was very grateful for the greeting, and what it implied. It was a few minutes later when he found himself alone with Dane, who laughed softly as he nodded to him.

''You are convinced at last?'' he said. ''Still, there is a little more of the same thing to be faced, and, if it would relieve you, I will send for Alfreton, who has some taste in that direction, to fix that tie for you. You have been five minutes over it, and it evidently does not please you. It's the first time I've ever seen you worry about your dress.''

Winston turned, and a curious smile crept into his face as he laid a lean hand that shook a little on the toilet table.

''I also think it's the first time these fingers wouldn't do what I wanted them. You can deduce what you please from that,'' he said.

Dane only nodded, and when they went down together laid a kindly grasp upon his comrade's arm as he led him into the great dining-room. Every man at Silverdale was apparently there, as were most of the women, and Winston stood still a moment, very erect with shoulders square, because the posture enabled him to conceal the tremor that ran thru him when he saw the smiling faces turned upon him. Then he moved slowly down the room towards Maud Barrington, and felt her hand rest for a second between his fingers, which he feared were too responsive. After that, everybody seemed to speak to him, and he was glad when he found himself sitting next to Miss Barrington at the head of the long table, with her niece opposite him.

He could not remember what he or the others talked about during the meal but he had a vague notion that there was now and then a silence of attention when he answered a question, and that the little lady's face grew momentarily grave when, as the voices sank a trifle he turned to her.

''I would have paid my respects to Colonel Barrington, but Dane did not consider it advisable,'' he said.

''No,'' said Miss Barrington. ''He has talked a good deal about you during the last two days, but he is sleeping now, and we did not care to disturb him. I am afraid you will find a great change in him when you see him.''

Winston asked no more questions on that topic until later in the evening, when he found a place apart from the rest by Miss Barrington's side. He fancied this would not have happened without her connivance, and she seemed graver than usual when he stood by her chair.

''I don't wish to pain you, but I surmise that Colonel Barrington is scarcely well enough to be consulted about anything of importance just now,'' he said.

Miss Barrington made a little gesture of assent. ''We usually pay him the compliment, but I am almost afraid he will never make a decision of moment again.''

''Then,'' said Winston slowly, ''you stand in his place, and I fancy you know why I have come back to Silverdale. Will you listen for a very few minutes while I tell you about my parents and what my upbringing has been? I must return to Winnipeg, for a time at least, tomorrow.''

Miss Barrington signed her willingness, and the man spoke rapidly with a faint trace of hoarseness. Then he looked down on her.

''Madam,'' he said, '' I have told you everything, partly from respect for those who only by a grim sacrifice did what they could for me, and that you may realize the difference between myself and the rest at Silverdale. I want to be honest now at least, and I discovered, not without bitterness at the time, that the barriers between our casts are strong in the old country.''

Miss Barrington smiled a little. ''Have I ever made you feel it here?''

''No,'' said Winston gravely. ''Still, I am going to put your forbearance to a strenuous test. I want your approval. I have a question to ask your niece tonight.''

''If I withheld it?''

''It would hurt me,'' said Winston. ''Still, I would not be astonished, and I could not blame you.''

''But it would make no difference?''

''Yes,'' said Winston gravely. ''It would, but it would not cause me to desist. Nothing would do that, if Miss Barrington can overlook the past.''

The little white-haired lady smiled at him. ''Then,'' she said, ''if it is any comfort to you, you have my good wishes. I do not know what Maud's decision will be, but that is the spirit which would have induced me to listen in times long gone by!''

She rose and left him, and it may have been by her arranging that shortly afterwards Winston found Maud Barrington passing thru the dimly-lighted hall. He opened the door she moved towards a trifle, and then stood facing her, with it in his hand.

''Will you wait a moment, and then you may pass if you wish,'' he said. ''I had one great inducement for coming here tonight. I wonder if you know what it is?''

The girl stood still and met his gaze, tho, dim as the light was, the man could see the crimson in her cheeks.

''Yes,'' she said, very quietly.

''Then,'' said Winston, with a little smile, tho the fingers on the door quivered visibly, ''I think the audacity you once mentioned must have returned to me, for I am going to make a very great venture.''

For a moment Maud Barrington turned her eyes away. ''It is the daring venture that most frequently succeeds.''

Then she felt the man's hand on her shoulder, and that he was compelling her to look up at him.

''It is you I came for,'' he said quietly. ''Still, for you know the wrong I have done, I dare not urge you, and have little to offer. It is you who must give everything, if you can come down from your station and be content with mine.''

''One thing,'' said Maud Barrington, very softly, ''is however, necessary.''

''That,'' said Winston, ''was yours ever since we spent the night in the snow.''

The girl felt his grip upon her shoulder grow almost painful, but her eyes shone when she lifted her head again.

''Then,'' she said, ''what I can give is yours—and it seems you have already taken possession.''

Winston drew her towards him, and it may have been by Miss Barrington's arranging that nobody entered the hall, but at last the girl glanced up at the man half-shyly as she said, ''Why did you wait so long?''

''It was well worth while,'' said Winston. ''Still, I think you know.''

''Yes,'' said Maud Barrington softly. ''Now, at least, I can tell you I am glad you went away—but if you had asked me I would have gone with you.''

It was some little time later when Miss Barrington came in and, after a glance at Winston, kissed her niece. Then she turned to the man. ''My brother is asking for you,'' she said. ''Will you come up with me?''

Winston followed her, and hid his astonishment when he found Colonel Barrington lying in a big chair. His face was haggard and pale, his form seemed to have grown limp and fragile, and the hand he held out trembled.

''Lance,'' he said, ''I am very pleased to have you home again. I hear you have done wonders in the city, but you are, I think, the first of your family who could ever make money. I have, as you will see, not been well lately.''

''I am relieved to find you better than I expected, sir,'' said Winston quietly. Still, I fancy you are forgetting what I told you the night I went away.''

Barrington nodded, and then made a little impatient gesture. ''There was something unpleasant, but my memory seems to be going, and my sister has forgiven you. I know you did a good deal for us at Silverdale, and showed yourself a match for the best of them in the city. That pleases me. By and by, you will take hold here after me.''

Winston glanced at Miss Barrington, who smiled somewhat sadly.

''I am glad you mentioned that, sir, because I purpose staying at Silverdale now,'' he said. ''It leads up to what I have to ask you.''

Barrington's perceptions seemed to grow clearer, and he asked a few pertinent questions before he nodded approbation.

''Yes,'' he said, ''she is a good girl —a very good girl, and it would be a suitable match. I should like somebody to send for her.''

Maud Barrington came in softly, with a little glow in her eyes and a flush on her face, and Barrington smiled at her.

''My dear, I am very pleased, and wish you every happiness,'' he said. ''Once I would scarcely have trusted you to Lance, but he will forgive me, and has shown me that I was wrong. You and he will make Silverdale famous, and it is comforting to know, now my rest is very near, that you have chosen a man of your own station to follow me. With all our faults and blunders, blood is bound to tell.''

Winston saw that Miss Barrington's eyes were a trifle misty, and he felt his face grow hot, but the girl's fingers touched his arm, and he followed, when, while her aunt signed approbation, she led him away. Then when they stood outside she laid her hands upon his face and drew it down to her.

''You will forget it, dear, and he is still wrong. If you had been Lance Courthorne I should never have done this,'' she said.

''No,'' said the man gravely. ''I think there are many ways in which he is right, but you can be content with Winston the prairie farmer?''

Maud Barrington drew him closer to her with a little smile in her eyes. ''Yes,'' she said simply. ''There never was a Courthorne who could stand beside him.''

—:THE END:—

ARTHUR'S METHOD

By Nelson A. Jackson

''Say, Arthur, I think that you are foolish. You just keep working, working all the time, just as if you were afraid of being idle for one minute.''

Will Harton had left his work for a few moments and stood beside Arthur Janes, who was industriously winding a coil for an electrical machine.

''No, I am not afraid of being idle,'' Arthur replied. ''I am naturally lazy enough, but Mr. Colman pays me for my time. It belongs to him and I have no right to waste it.''

''You're too particular,'' Will said. ''Mr. Colman doesn't care if we take a little time off now and then. I have been working here longer than you have and I know him better than you do.''

''Why are you so quick to get back to your work, then, whenever you hear him coming?'' asked Arthur.

Will flushed guiltily. ''Oh, well,'' he answered, ''I don't know as I should care to have him find me idle, but it doesn't make any difference when he is out of the room or when his back is turned. I guess that fifteen minutes wasted now and then can't be of very much importance, because I am getting bigger wages than you do.''

''I know that your wages are higher, but what I earn I wish to earn honestly.''

''Do you mean to say that you think that I am dishonest?'' Will retorted angrily.

''I can't judge you. I know that I could not do as you do and have a clear conscience. Each one of us must have his own standard,'' was Arthur's quiet reply.

''I must say,'' said Will, ''that you have altogether too much Bible mixed up with your ideas of business. I tell you, you can't mix the two. I suppose you think it is necessary for you to come to the shop half an hour early each morning.''

''No, I do not think that it is at all needed, only I am anxious to find out all that I can about electricity. I wish to go to a technical school and to become an electrical engineer.''

''Oh, well, you will have to lose that conscience of yours, before you get along anywhere.''

''I think not.''

The conversation was broken off at this point, as Mr. Colman was heard approaching and Will made haste to reach his place and resume work.

Mr. Colman came slowly down the room between the rows of workmen and boys. He stopped by the side of Arthur Janes, spoke kindly to him, made a few suggestions and passed on. This was a compliment to Arthur, as Mr. Colman seldom spoke to his employes while they were at work. When he did, it was always with a pleasant smile and a helpful word.

As they were passing out after the day's work, Will Harton gave Arthur another tongue lash with the words, ''I see Old Colly is getting struck on you, but your goody-goody ways won't help you in the long run.''

''Come what may, I shall always try to do what is right,'' was his only reply.

Arthur had graduated from the village high school the preceding spring, where he had fitted himself to enter an engineering school. He had been bitterly disappointed when in the early summer financial losses had made assistance from his father impossible. He had then determined to enter the Colman general electrical works. Here he went at it to learn as much as possible concerning electricity and its practical workings while earning money for his college course. Arthur had never been accustomed to steady work and it was hard for him to don blue overalls and keep at his employment day after day. He rang true and soon realized that what had seemed a misfortune was in reality a blessing. He spent his evenings studying and reading along the lines of his work. Will Harton was jealous because Mr. Colman paid more attention to Arthur than to him. He was continually trying to get Arthur to slight his work, but to no avail.

The next morning when the men came to their work they found notices posted, which announced a meeting of all the employes at the noon hour. After lunches had been eaten the men gathered in the large storeroom on the first floor. Mr. Colman came before them with these words: ''Men, what I have to say hurts me and will entail hardship on many of you as well as myself. With few exceptions, you are good workmen. I have no complaint to make. You know that during the past few months the American people have been facing a financial crisis. I have been afraid it would reach us and it has. Our sales have fallen off over one-half and several big concerns which owe us large amounts have failed. As a result, it will be necessary to lay off a large portion of you. At present all the married men will be retained and a few others, who will be notified. The rest need not report for work Monday morning.''

That afternoon Arthur was filled with anxiety. He wondered what he could find to do. He might possibly be retained, but he thought it hardly possible, as he was one of the youngest and most inexperienced of the hands. As soon as Will had a chance he slipped over to Arthur's side and said, ''I'll bet you that I keep my job and that you get fired. I know the business too well to be dismissed. What do you think you'll do now?''

''I have absolutely no idea at present.''

''Possibly you can start your college course,'' Will went on tauntingly, ''and pay your way with your high-flown ideas of business principles.''

Arthur made no reply. He was too indignant even to look at Will. ''I am glad that I am not burdened with your narrow ideas of right and wrong,'' Will remarked, as he turned to talk to another boy.

When the pay envelopes were received at the close of the day's work, Will and Arthur each found a slip requesting them to report at Mr. Colman's office at noon.

''Mr. Harton first, Mr. Janes, if you will wait a few moments,'' Mr. Colman said and closed the door to his private office. He motioned Will to a seat and said kindly: ''Will, I wish to give you a little fatherly counsel. I shall not need your services any longer I shall retain Arthur Janes. You will want other work, but you have one lesson to learn before you can be successful anywhere. You are at present working on the principle of doing as little as possible and getting as much as possible. You are in the habit of wasting at least one hour a day of my time. In other words, you have stolen from me constantly.''

Will was white with rage. ''I'll bet Janes has blabbed on me,'' he exclaimed.

''No, Mr. Harton, no one has told anything. I have merely observed. An employer sees more than his men often give him credit for seeing. I know that I have used harsh words, but they are true. Now, my boy, the thing for you to do is to give your next employer your best. Then, and only then, will you become indispensable to your company. And remember it is the indispensable men who become foremen and managers. I started from the bottom and know the truth of my words. You have ability and are bright and quick You will succeed if you are honest with yourself and employer. That is all.''

As Will went out, he said to Arthur, ''I am fired; just my luck; I never work up anywhere.''

Mr. Colman, who had followed him to the door, caught the words and said, somewhat sharply, ''Your luck is just what you make it.''

Arthur entered the office. Mr. Colman took him by the hand and said, ''Arthur, I have been more than pleased with your work for the past few months. I should like to keep you, but I have something better for you. I am well acquainted with the superintendent of the electrical works at Orton. I have secured a place for you there. There you can earn your college expenses and at the same time be obtaining practical experience, which is so necessary in your chosen profession.''

''Thank you, thank you, Mr. Colman, how can I ever repay you for your kindness,'' and Arthur's eyes sparkled with joy.

''My boy, you have earned it.''

''I shall try to prove myself worthy of your trust and kindness.''

''You will, I have no fear.'' And he did.

SMILE WHENEVER YOU CAN

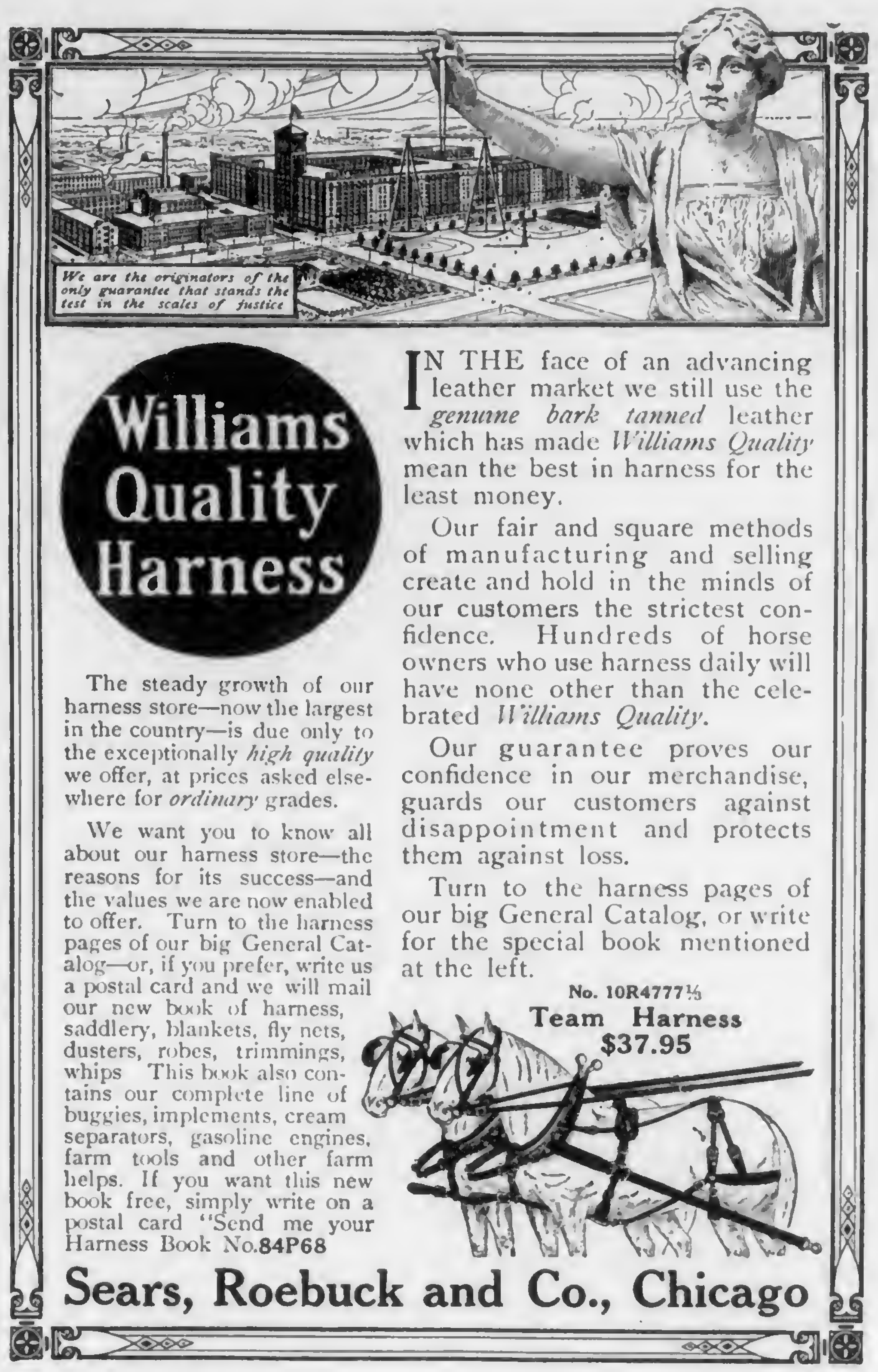
When things don't go to suit you
  And the world seems upside down,
Don't waste your time in fretting,
  But drive away that frown;
Since life is oft perplexing,
  'Tis much the wisest plan
To bear all trials bravely
  And smile whenever you can.

Why should you dread the morrow,
  And thus despoil today?
For when you borrow trouble
  You always have to pay.
It is a good old maxim
  Which should be often preached—
Don't cross the bridge before you
  Until the bridge is reached.

You might be spared much sighing
  If you would keep in mind
The thought that good and evil
  Are always here combined.
You may count up mighty riches
  In your store of earthly wealth
But miss that greater blessing,
  That precious jewel—health.

And tho you're strong and sturdy,
  You may have an empty purse—
And Earth has many trials
  Which I consider worse—
But whether joy or sorrow
  Fill up your mortal span,
'Twill make your pathway brighter
  To smile whenever you can.

—WILL A. ENGARD.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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 6, 1914.

The butter offerings were mostly of more or less defective qualities. Eggs ruled firm at former prices. There was little change in the poultry market. There was no important change in fruits and vegetables.

Butter.—Western creamery, 27c; extras, 25@26c; firsts to seconds, 21@23c; special prints 32@35c; near-by prints 28c.

Eggs.—Candled 22@25c doz.; extras 21c. Current receipts at $6.00 per standard case.

Poultry.—Fowls, 18@19c; old roosters 12@13c; pigeons 35@38c pair.

Dressed Poultry.—Western fowls 12@19c; roosters, 15c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 90@$1.00. Onions $2.50@2.75 per 100-lb bag. Peppers $3.00@4.00 per crate. Eggplant $2.50@3.00 carrier. Lettuce $1.50@3.00 hamper. Beets 5@6c per bch. Sweet potatoes 50@75c hamper. String beans $3@4 per hamper. Squash $3@3.50 per crate. Cucumbers, Florida $1.50@2.00 doz. Celery $2.75@3 crate. Cabbage, new $1.00@1.25 per hamper.

Fruit.—Apples, $4@6.00 bbl. Pineapples, per case $3.00@3.50; pears, 75c basket. Cranberries $12@13 bbl. lemons, $2.50@3 per box; grape fruit $2.50@3.50 per box; oranges, $2.00@3.00 per box.

Hay and Grain.—No. 1 hay, large bales, $18@18.50; No 1 medium $17.50@18.00 no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00; straw No. 1 new straight rye, $16.50@17.00 No. 2 do., $15@15.50; No. 1 tangled rye straw new $12@12.50; No. 2 do., $11@11.50; No. 1, wheat straw, $10@10.50; No. 1 oat straw $10.50@11; new shelled corn No. 2 yellow 75@75½c. Wheat No. 2 red 98@99½c; No. 1 Northern $1.03@1.04; No. 2 white oats 45¾@46¾c; No. 3 white 41@44½c. Standard white 45@45½c.

Coffee.—Rio 7s 9c; Santos 4s 11¾c. Mild Coffee.—Cordova 12½@16½c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.15; powdered, $4.00; granulated, $3.90; standard granulated, $3.95; crystal A, $3.90.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅝@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs, 11⅝@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6⅞c; country, 6⅝c; do dark, 5½c; do. cakes, 7c.

Philadelphia Retail.

Vegetables.—Onions 15c ¼-pk. Peppers, 3 for 10c. Eggplants 15@25c apiece. Cabbage, 5@10c a head. Lettuce 10@15c Beets new 10c bch, 3 for 25c. Sweet potatoes 20c ¼-pk. White potatoes, 25c ½-pk. String beans, 20c qt. Tomatoes, hothouse 6 for 25c; cucumbers 10@15c apc. Celery $1.00 bch. Squash 10@15c apiece; Cauliflower 20@35c. apc; mushrooms 40@50c lb; asparagus 30@50c bch.

Fruit.—Apples 25c ¼ pk. Pineapples 25c apiece. Cranberries 20c quart; lemons 15c doz; grapefruit, 2 and 3 for 25c; $1.50 per doz; Oranges 30@50c doz.

BALTIMORE PRODUCE

Baltimore, Md., April 6, 1914.

In the Baltimore wholesale market butter, eggs and poultry were steady.

Butter.—Creamery, fancy 26½@27c; do choice, 24@25c; prints 29@31c, blocks 26@28c; Maryland and Penna. rolls, 17@19c; process, 20@22c.

Eggs.—Near-by firsts, 19c; western, 19c; southern, 18c.

Live Poultry.—Hens, 18c; chickens, 18c; old roosters 10@11c; ducks 20c.

Vegetables.—Potatoes, Maryland and Penna 65@75c bu.; beets, 4@6c bch; beans, green $4@4.25 per basket. Celery $1.75@2.25 crate. Cucumbers $4@5.00 bas. Lettuce $2.25@2.75 bas. Tomatoes $2.50@2.75 carrier. Onions $2.50@2.75 sack. Eggplant $3@3.50 crate. Squash $2@2.50 crate. Cabbage new $1.75@2.25 crate.

Fruit.—Apples, $3.00@4.50 bbl. Grape fruit $2.25@3.50 per box. Oranges $2.50@2.75 box.

Grain.—Wheat No. 2 red western, 99¾c. Spot, 99¾c; corn yellow shelled, 72c. Oats standard white, 44¾@45c; No. 3 white 44¾@45c; rye 60@71c.

Hay and Straw.—Timothy No. 1, $18.00; No. 2 timothy $16.00@17.00; do. No. 3, $14.00@15. No. 1, clover $16.00@16.50; No. 2, do $13.00@15.00; No. 1, tangled rye straw, $12.00; No. 1 oat straw $11.00@11.50; No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $30.50@31. Middlings, flour to white $29@31; western middlings, $29@29.50; city mills, middlings, $29@29.50.

NEW YORK PRODUCE

New York City, April 6, 1914.

Good grades of butter advanced, tho arrivals were slow. Egg values for good stock were well sustained tho they were little higher. The poultry market was fairly active, with a disposition toward higher ratings on good stock. Fruits and vegetables about normal.

Eggs.—State and near-by hennery whites, fine to fancy 26c; gathered whites 25½@26c, fair to good 24@25c fresh gathered firsts to extras 20½@22c seconds to thirds, 19@19¾c; no grades 17@19c; mixed 20@21c.

Butter.—Creamery firsts to extras 24½@26½c; thirds to seconds, 19@24c; state dairy 17½@25½c; packing stock 12@16½; process 11@20½c.

Cheese.—Whole milk specials, 19@19¼c; do common to fancy, 16@19¼c; skims 5@15c.

Dressed Poultry.—Turkeys, dry, 21@23c; chickens, 11@25c; fowls, 15@19½c; old roosters, 11½c; ducks, 8@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage, $1.50@1.75 bbl. Green beans $2.00@4.00 bas. Carrots $1.25@2.50 bag. Cucumbers $1@3.50 doz. Lettuce $1.50@4.50 bas. Squash, $3@3.50 bbl. Celery $2.75@3.25 standard crate. Onions $2.25@3.00 100-lb bag. Tomatoes, 75c@$2.50 carrier; peppers $2.00@3.00 per box. Beets $4@5.00 per 100 bunches. Potatoes $3.50@9.00 bbl. Sweet potatoes, $1@2 bbl. Eggplants $1.50@2.75 per box. Cauliflower $1.75@2.00 crate; asparagus $1.50@3.00 per doz bunches.

Fruit.—Apples $2.50@7.00 bbl. Cranberries $11.00@15.00 bbl.

Grain. Wheat No. 2 red $1.04, No. 1 Northern, $1.01; corn, new No. 3 yellow 76⅝c; oats, standard white 44½@45c.

WASHINGTON PRODUCE

Washington, D. C., April 6, 1914.

Eggs.—Per dozen, 19c.

Live Poultry.—Hens, per lb., 18@19c; roosters, 11c; springers, 23@25c.

Vegetables.—Potatoes, $2.15@2.40 sack; Onions, $2.00@2.50 bu; Lettuce per bas., $1.00@3.00. Peppers $2.00@4.00 crate; Eggplant, $2.00@3.50 crate. Beets new $6@7 per 100 bchs. Carrots 5@6c per bch. Cabbage $1@1.50 bbl. Cucumbers $3.50@5 bas. Sweet potatoes 50c@$1.50 per bbl. Celery per doz., 60c@$1. Tomatoes $1.50@2.50 crt. Cauliflower, $1.50@2.25 per ½ crate.

Fruit.—Apples, $4.00@7.00 bbl. Grapes $4.50@7 ½-bbl. keg. Pineapples, $3@3.50 crate. Cranberries, $2.75@3.00 small box. Grapefruit, $3.00@4.00 crate.

WILMINGTON PRODUCE.

Wilmington, Del., April 6, 1914.

Butter.—Print butter, 38@45c lb. Creamery roll, 35@45c.

Poultry.—Chickens, dressed, 18@25c; ducks, 18@20c.

Eggs.—30@35c doz.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk. Cabbage, new 4c up. Sweet potatoes 40@50c bas. Onions 20@25c ¼-pk; new 20c qt. Eggplants 10@15c ea. Peppers 30@50c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch. Cauliflower, 20@25c each.

Fruit.—Apples, 15@25c ¼-pk. Pineapples 20@25c apiece. Grapes 20@25c lb. Oranges, California, 25@30c doz. Florida, 25@30c doz. Bananas, 10@15c doz. Cranberries 20c quart. Grape Fruit, 7@10c each.

YORK PRODUCE MARKET

York, Pa., April 6, 1914.

The average attendance at the Friday and Saturday markets was very large. Inquiry was brisk but no heavy buying. The first home grown truck from the hot-beds is coming on the stalls. Eggs are plentiful and buying light.

Eggs.—16@19c doz.

Butter, Country, 30@33c; separator, 34@36c. Milk, 6c per quart. Cream, 12c per pint.

Poultry.—Scarce. Hens 15@16c. Dressed poultry, 40@85c each.

Vegetables.—Potatoes 12@16c ½-pk; 70c@$1.00 bu; cabbage 3@10c each; lettuce, 3@10c; beets, 5c bch; radishes 5@8c bch; onions 3c bch., 15@18c per ½-pk; lima beans 14@16c qt; sweet potatoes, 14@16c per ½-pk; lard 14@16c lb; celery, 10@12c; peppers, 8@12c doz; turnips 10@12c ½ pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 22@25c qt.

Fruit.—Apples, 25@35c ½-pk; pears, 15@20c per ½-pk; chestnuts, 12c quart; walnuts, 15c per ½-pk.

Retail Grain Market.—Wheat, $1.08 bu., corn, 84c; oats, 55c, rye, 77c; bran, $1.60 cwt; middlings $1.60 cwt.

Wholesale Grain Market.—Wheat, 98c; corn, 74c, oats, 45c; rye, 70c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 6, 1914.

Beef Cattle.—There was a little improvement in the market, particularly noticeable on the better class of steers. Lancaster County, Pa., cattle with Ohio and Western stock were on sale in moderate but sufficient numbers. Cows and calves were in ordinary request at former values.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,556	9,370	4,933
Previous week	2,403	6,657	5,288

Best steers	$8.60@8.80
Choice steers	8.37½@8.50
Good	8.00@8.25
Medium steers	7.50@7.75
Common steers	7.00@7.25
Bulls	5.00@6.50
Fat cows	5.25@6.00
Medium cows	3.50@4.75
Thin cows	2.75@3.00

Veal calves steady.

Best calves	$9.50@10.00
Good to choice do	9.00@9.50
Medium	7.50@8.00
Common do	6.50@7.00

Sheep and Lambs.—Supplies were increasing but prices as a rule were well maintained, choice stock commanding the better inquiry.

Choice wethers	$6.25@6.50
Good do.	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.50@8.75
Good to choice do	$8.00@8.25
Common to medium	6.00@8.00

Hogs.—The market was about steady at the prices with demand of a seasonable character. Westerns as to size and quality $12.50@12.75.

City Dressed Stock.—Every variety of choice and prime class commanded full rates but trade was very conservative. Steers, 12@14c; heifers, 10½@13c; cows, 9@11½c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., April 6, 1914.

Cattle.—With a supply of 85 loads on sale about the same number as a week ago, the market ruled steady on the tidy fat cattle while the best heavy cattle and the medium grades on the plain order were generally 10 to 15 cents per cwt. lower; plain light steers sold about steady. Bulls in light supply and sold steady. Heifers steady on best grades and easier on others. Cows in fair supply and all grades sold a little easier. Today's receipts were 80 loads. The market ruled active and stronger on all grades.

Good to choice	$8.75@9.00
Good 1,300-1,400 lb	8.55@8.70
Medium to good 1,200-1,300 lb	8.20@8.40
Tidy 1,050-1,150 lb.	8.20@8.40
Fair to medium, 900-1,100 lb	7.50@8.00
Rough half fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs.	5.50@6.50
Rough, half-fat	5.00@7.00
Common to good fat oxen	4.00@6.50
Common to good fat bulls	5.00@7.90
Common to good fat cows	4.25@6.75
Heifers	5.50@8.00
Bologna cows	3.75@4.25
Fresh cows and springer	25.00@85.00

Calves.—Veal calves in fair supply and market closed 50 cents per cwt. higher. Today's receipts were 700 head. The demand was good, and the market ruled 50 cents higher.

Heavy and thin calves	$5.00@7.00
Veal calves	8.00@11.50

Sheep and Lambs.—The supply of sheep and lambs has been fair all week and market ruled steady on all best grades, while the plain and medium grades were slow. Spring lambs steady. Today's receipts were 22 double-deck loads. The market was fairly active at steady prices on sheep, while lambs were lower. There was a fair supply of spring lambs, for which there was a good demand at prices steady with last week.

Prime wethers	$5.80@6.00
Good mixed	5.50@5.75
Fair mixed ewes and wethers	4.50@5.25
Culls to common	3.00@4.00
Prime lambs	6.00@7.35
Clipped lambs	5.00@7.25
Clipped sheep	5.80@6.00
Spring lambs	9.00@12.00

Hogs.—The supply during the week has only been fair and with a good demand the market ruled active and the close for the week was 20 cents per cwt. above Monday's prices. Today's receipts were 50 double-deck loads. The market ruled 5 to 10 cents lower than Saturday.

Prime heavy	$9.20@
Prime medium weights	9.30@
Heavy mixed	9.25@
Best heavy Yorkers	9.30@
Light Yorkers	9.30@
Pigs	9.10@9.20
Common to good roughs	7.75@8.35
Stags	7.00@7.25

BALTIMORE LIVE STOCK

Baltimore, Md., April 6, 1914.

Cattle.—Receipts for the week 1,317 head against 2,182 last week.

Steers	$6.35@8.35
Heifers	5.50@6.75
Cows	3.00@5.75
Bulls	5.25@6.75
Fresh cows	32.50@72.50

Sheep and lamb receipts for the week were 4,200 head against 3,020 last week. Light supply; market steady.

Sheep	$3.75@6.50
Lambs	6.00@8.65

Hog receipts for the week were 9,824 head against 12,771 last week.

Light western	9.55@9.60
Heavy to medium	9.35@9.40
Near by	9.55@9.60
Pigs	9.25@9.35

Calves.—Receipts for the week were 271 head, against 303 head last week. Light supply, market higher at $6.00@9.50.

BUFFALO LIVE STOCK

Buffalo, N. Y., April 6, 1914.

Cattle.—The week opened slow with a fair demand for choice. On the close the demand was only fair and no change in the market prices. Today's receipts were 4,000 head. Export cattle ruled firm, and other grades slow to steady.

Choice heavy steers	$9.00@9.25
Fair to good	8.00@8.75
Yearlings	7.75@8.65
Handy butchers	7.00@8.50
Good to choice fat cows	6.75@7.60
Good to choice heifers	7.50@8.15
Butcher bulls	6.00@7.75
Feeders	5.75@7.25
Cows and springers	30.00@85.00

Calves.—The demand opened good and the basis was 50 cents higher, being $10.75@11. On the close the market was active, the basis being $1 per cwt. higher. The basis on choice veals was $11.50@12. Today's receipts were 16,000 head.

Choice veals	$11.50@12.00
Lights and thin	6.00@8.75

Sheep and Lambs.—The week opened active and higher on choice stock. Sheep were in good demand and a shade higher. Yearlings have been in good demand for some time and moderate supply. On the close the market was active with light receipts and the basis 15 to 25 cents higher, the best lambs brought $8.60@8.65. There was a good demand for yearlings. Today's receipts were 16,000 head, and prices ruled lower.

Choice lambs	$8.25@8.50
Yearlings	7.25@7.50
Wethers	6.75@7.00
Ewes	6.25@6.50
Sheep	6.00@6.25

Hogs.—The week's demand opened active and the basis higher. Eastern buyers took light weights. Common grades were in fair demand. On the close the trade was active and 10@15c higher. York weights sold at $9.35@9.40. Pigs firm at $9@9.15. Common hogs were fairly active and firm. Today's receipts were 14,400 head, and the market ruled steady.

Heavies	$9.25@9.30
Mixed and medium	9.35@9.40
Yorkers	9.35@9.40
Light Yorkers	9.35@9.40
Pigs	9.15@9.25
Roughs	8.30@8.50
Stags	7.00@7.50

Horses.—Today's receipts were 850 head. There was a fair demand for workers. Best teams $700@750; good, $500@700, choice single workers, $175@250.—S.

NEW YORK LIVE STOCK

New York City, April 6, 1914.

Beef Cattle.—Receipts for week 3,200 head. Market firm.

Steers	$6.50@9.85
Bulls	5.25@7.75
Cows	3.25@7.00
Dressed beef	11¾@13½c.

Calf receipts 8,900 head. Market strong.

Choice	$8.50@12.00
Culls	6.50@8.00

Dressed calves steady. Dressed veals, 14@18c.

Sheep and lamb receipts 8,300 head. Market strong.

Sheep	$4.75@6.50
Culls	4.00@4.50
Spring lambs	7.50@8.75

Hog receipts 8,900 head. Market higher. Choice, $9.35@9.50.

CHICAGO HORSE MARKET

Chicago, Ill., April 6, 1914.

Horses were in ample supply and in good local and shipping demand last week, especially during the first three days, with prices ruling unchanged in most cases. Farm geldings sold mainly at $140@185 per head, a few selling as low as $125 while most of the farm mares brought $185@225. Light drafters sold at $225 and upward, with a choice class of heavier weights taken on the basis of $275@350, but not many sold as high as $300. Inferior horses were slow at $50@100, with drivers salable around $100@200. Receipts for the first quarter of the year aggregated 31,899 head and of this number shippers purchased 27,986 head.—F.

NEW YORK MILK MARKET

New York City, April 6, 1914.

The surplus is still growing as the supply is following the usual tendency in spring to increase. The demand is dull.

The receipts of milk and cream in 40-quart cans for the week ending April 4, were as follows:

Railroad	Milk	Cream
Erie	45,647	2,355
Susquehanna	8,872	360
West Shore	18,750	480
Lackawanna	58,750	1,570
N. Y. Central (long haul)	81,051	1,995
N. Y. Central (short haul)	11,995	91
Ontario	39,743	3,067
Lehigh Valley	36,229	1,166
Homer Ramsdell Line	1,960	42
New Haven	10,708	169
Pennsylvania	5,019	77
Other sources	1,675	20
Totals	320,399	11,391

ELGIN BUTTER QUOTATION

Elgin, Ill., April 6, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 24½ cents.

VISIBLE GRAIN MARKET

New York City, April 6, 1914.

Visible supply of grain:

Wheat decreased 1,772,000 bushels; in bond, increased 167,000.

Corn decreased 942,000.

Oats decreased 637,000; in bond, decreased 125,000.

Rye increased 8,000.

Barley decreased 182,000; in bond, increased 35,000.

GRASS SEED MARKET

Toledo, O., April 6, 1914.

Cloverseed.—Prime cash, $7.50. April, $7.47½; October, $7.55. Alsike—Prime cash, $9.75. Timothy.—Prime cash and April, $2.27½; September, $2.30.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., April 6, 1914.

Receipts of hay to this market are the lightest they have been for some time; billings in transit likewise. While there is no spirited demand, nevertheless, if receipts continue as they have been during the past week, market is bound to do better. We are of the opinion that now would be as good a time as any to market some good hay. Poor stock still hard to dispose of. The demand for clover hay has fallen off on account of the advent of spring.

No. 1 timothy	$17.00@17.25
No. 2 timothy	14.50@15.50
No. 1 light mixed	14.75@15.50
No. 1 clover mixed	14.25@14.75
No. 2 clover mixed	10.50@11.50
No. 1 clover	14.00@14.50
No. 2 clover	10.00@11.50

Straw.—Demand fair, receipts not heavy but equal to demand.

No. 1 Oats	$9.00@9.25
No. 2 Oats	8.75@9.00
No. 1 Wheat	8.75@9.00
No. 2 Wheat	8.50@8.75
No. 1 Rye	9.25@9.50
No. 2 Rye	8.50@9.00

Ear Corn.—Demand is strong for good, sound, yellow ear corn, but there is considerable off-grade corn arriving which is hard to place.

New No. 2 yellow	74½@75c
New No. 3 yellow	71@72½c

Oats.—Receipts continue liberal and demand only fair; market quiet.

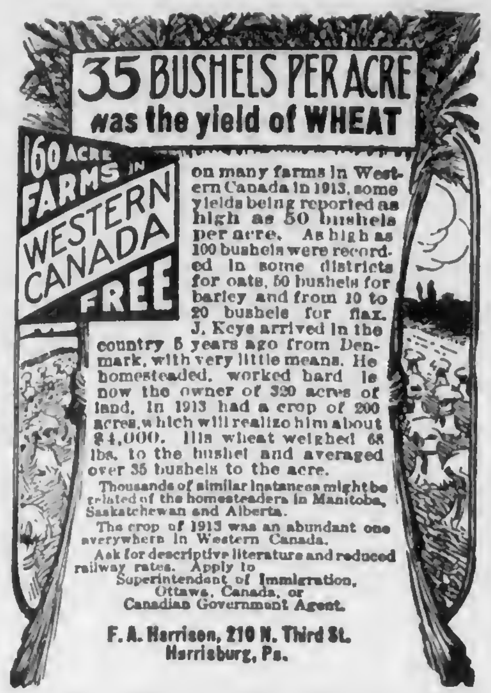
No. 2 white	43¼@43½c
Standard oats	42½@43c.
Standard No. 3 oats	41½@42c.

TOBACCO MARKET

A local dealer bought some 60,000 pounds of fairly good but slightly hail-cut tobacco at $2, $3 and $4 per cwt. Packers are well stocked with old tobacco. The cigar industry is quiet and the whole situation is dull and inactive with little demand for the 1913 crop. Growers are ready and in some instances anxious to sell that they may have the use of their money and turn attention to the growth of the new crop. Such in brief is the general situation outside the tobacco organization.

A bulletin issued by the Society of Tobacco Growers' Organization states that the company now holds 80,783 pounds of wrappers, 794 pounds of Havana and 19,794 pounds of filler tobacco. It also states that the wrapper tobacco was taken in by the company at an average of $8.50 per cwt. and that fillers have been sold at a price which nets the company 30 percent profit. Illustrating the advanced prices of the company a grower who had been offered $— per cwt., delivered and was graded at $1 and $2.50. The same grower refused to let his cash payments for stock be credited on the amount of his tobacco stock on a basis of 30 percent of the amount, and took that additional amount of stock in the company. Another grower gave $100 for additional stock and will thus have 100 more votes in the election of the permanent board of directors. Many meetings are being held and the general success of the movement is quieting much of the opposition recently heard.

The general tobacco market was characterized by less activity due more to diminished supplies than to decreased demand. It is conceded that climatic limitations alone can preclude a large crop in Connecticut the present year. Already an aggregate of many acres of white canvased tobacco beds are to be seen there and all preliminary processes are being pushed to the limit. In New York the situation is less advanced the none the less animated. The acreage will be increased and some trials will be made of a few special types which have recently attracted attention in market circles. The amount of tobacco remaining in growers' hands there is small. Unsold remnants are being carefully sought by buyers and in a short time there will be scarcely a crop remaining.—H. F. Tweed, April 6, 1914.


35 BUSHELS PER ACRE
was the yield of WHEAT
160 ACRE FARMS IN WESTERN CANADA FREE

on many farms in Western Canada in 1913, some yields being reported as high as 50 bushels per acre. As high as 100 bushels were recorded in some districts for oats, 50 bushels for barley and from 10 to 20 bushels for flax. J. Keys arrived in the country 5 years ago from Denmark, with very little means. He homesteaded, worked hard, is now the owner of 320 acres of land, in 1913 had a crop of 200 acres, which will realize him about $4,000. His wheat weighed 68 lbs. to the bushel and averaged over 35 bushels to the acre.

Thousands of similar instances might be related of the homesteaders in Manitoba, Saskatchewan and Alberta.

The crop of 1913 was an abundant one everywhere in Western Canada.

Ask for descriptive literature and reduced railway rates. Apply to Superintendent of Immigration, Ottawa, Canada, or Canadian Government Agent.

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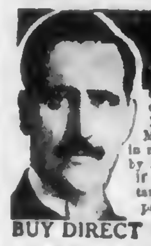

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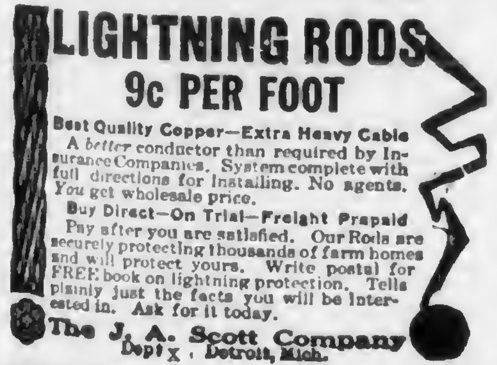

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Sore Foot—Rheumatism.—I have a horse that lost hind shoe at which time he showed some lameness. After a rest he was shod, then went very lame. The shoe was removed and he gradually recovered. A few days later he went lame in left fore leg and I located lameness in shoulder, applied liniment and he improved. I also noticed today that he began to limp on hind right leg. The horse seems to move with difficulty in stable on fore feet and when making a step jerks as if suffering pain. This horse is about 15 years old and apparently healthy. H. C. H., Felton, Pa.—I am inclined to believe that your horse is rheumatic. Give him 2 dr. sodium salicylate and 2 dr. powdered nitrate of potash at a dose in feed, 3 times a day. Apply 1 part turpentine, 1 part aqua ammonia and 4 parts olive oil to sore parts every day.

Cough — Worms — Tonic Powder. — Will you give formula for cough in horses in powder form; also a remedy for worms in powder form and tell what to do for pin worms? I would also like to keep on hand a good tonic powder for run-down horses, something that will assist them in shedding their coat. F. L. G., Wawa, Pa.—For cough mix together equal parts of powdered licorice, ground ginger and powdered belladonna leaves and give a tablespoonful at a dose, 3 times a day. For worms mix together equal parts ground wormseed, ground gentian and powdered sulphate iron and give a dessert spoonful at a dose, 2 or 3 times a day. For pin worms drop 1 lb. of quassia chips in 2 gallons of boiling water, let it boil until it reduces to one gallon, then strain and inject a portion into rectum every 2 or 3 days. For a tonic mix together equal parts of ground red cinchona, ginger, fenugreek and salt.—Give a tablespoonful or two at a dose, 3 times a day. The above formulas are not the best, but are of moderate cost. To buy the best remedies for these ailments will oblige you to go deep in your pocket; therefore, I think best to prescribe inexpensive drugs.

Weak Fetlock Joints.—I have a horse that seems apparently all right until I drive him a long distance; then he seems to become lame in both hind ankles. G. W. H., East New Market, Md.—You should avoid exhausting your horse for he may be one of the soft kind that will never endure much hardship. Give him 1 dr. ground nux vomica, ½ oz. ground gentian and ½ oz. ginger at a dose in feed, 3 times a day. Rub his ankles with alcohol twice a day and bandage them in cotton after each drive.

Lung Fever.—What should I give a horse for lung fever? F. W. M., Mars, Pa.—I am led to understand that what you call lung fever is pneumonia or inflamation of the lungs. There is no specific treatment for pneumonia inasmuch as the pneumococcus is recognized as a specific cause. I presume that sometime there will be found a serum which will counteract the disease. In the treatment of pneumonia, we must treat the symptoms; therefore it is necessary to stimulate the heart. A strong heart tends to prevent consolidation and a weak one always encourages it. This being the case, nux vomica or strychnine must be given. The dose of powdered nux vomica for a horse is ½ to 2 drams. The dose of fluid extract is from ½ to 1½ drams and the dose of strychnine sulphate is from 1 to 3 grains. This medicine should be given 3, 4 or 5 times a day. It is necessary to apply antiphlogistine or other hot applications over the lungs. The horse should be kept in a dry, clean, well-ventilated place where he can have plenty of pure air, and the body should be warmly clothed. Drafts must be avoided. He should have cold water before him all the time. Offer him whatever kind of food he craves. Keep the bowels open, but do not give purgatives and do not get too much kidney action. In the second stages, give quinine, gentian, nux vomica and alcohol every few hours. Continue good nursing and give tonics and stimulants freely. There is no certain remedy for pneumonia.

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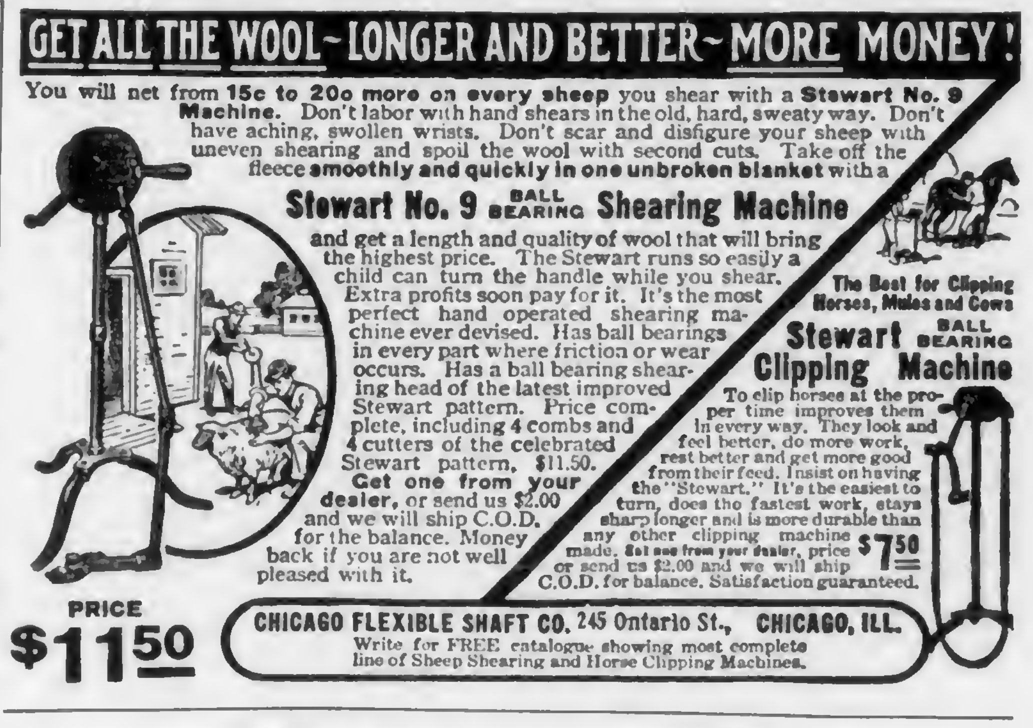

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Towels
Wash Rags
Bed Spreads
Comforters
Notions
Umbrellas
Toilet Articles
Baby Carriages
Desks—Safes
Curtains
Pianos
Rugs
Linoleums
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ESTABLISHED 1880 PUBLISHED WEEKLY
Vol. 35—No. 16. PHILADELPHIA, PA., SATURDAY, APRIL 18, 1914. 2 Years for $1.00.

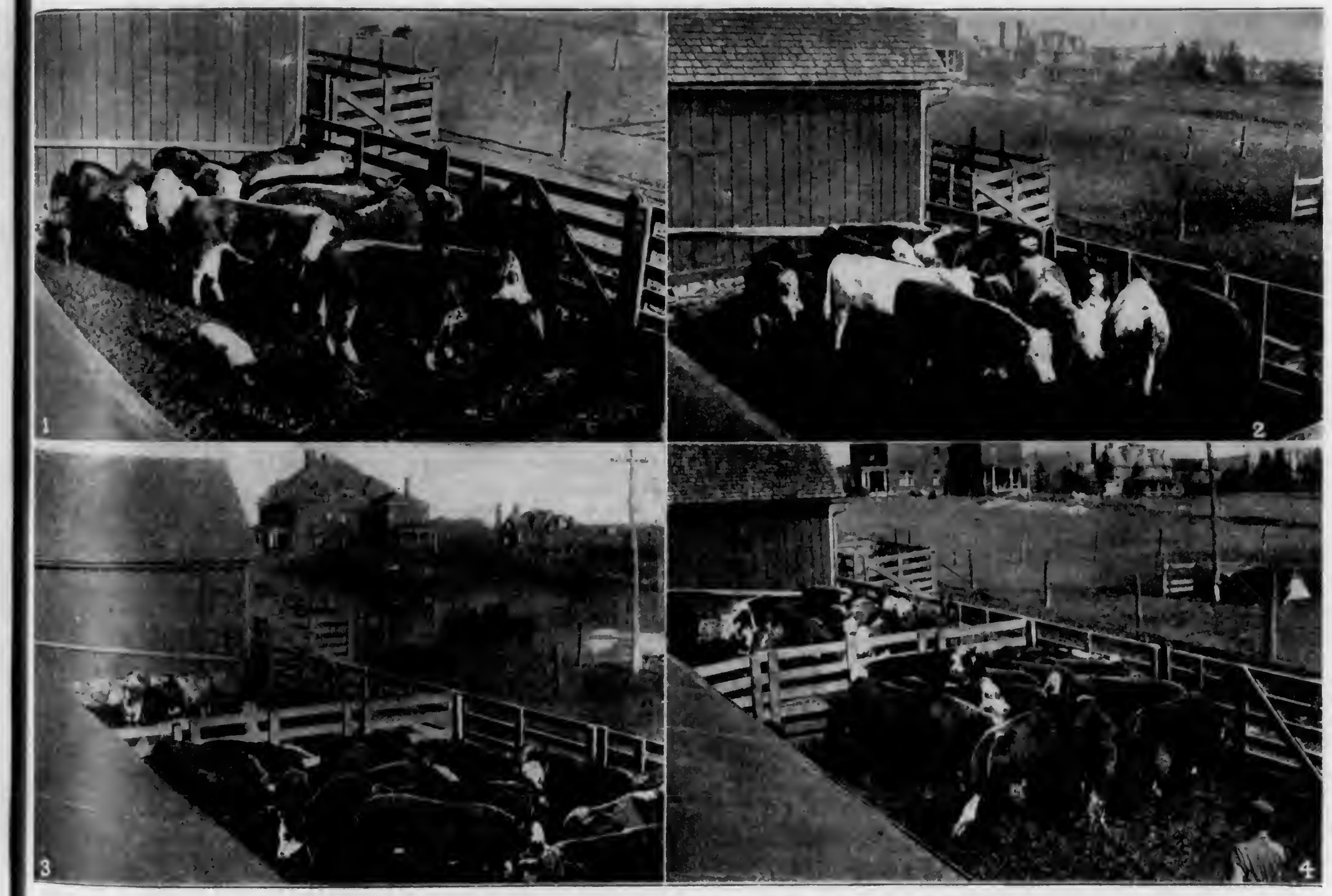
Headle Dr T J
Rutgers College
814

Essentials in Corn Growing--I.

By C. C. HULSART,
Monmouth Co., N. J.

When we pause long enough to think we must wonder what is the matter with our yields of corn. Our whole country is producing an average of not over 35 to 36 bushels per acre. If we consider it by states, the yield is about the same. But if we view it from small areas or consider it from individual farm standpoints, we see a vast difference. Low yields must result from lack of observing some of the essentials. There are individual growers that rarely produce less than from 80 to 100 bushels per acre. I read recently of one instance where 200 bushels was reached. When individual growers can and do produce these large yields, certainly the growers of the country who make corn growing a specialty can do much better than is being done. They must apply better methods and observe the essentials necessary in order to bring best results.

Seed. One of the first essentials in corn growing is good seed. Too often this is neglected altogether. When the farmer gets ready to plant he goes to his crib or to a neighbor's crib and helps himself to enough for his planting, regardless of breed, types or even adaptation to his soil or his conditions. He minimizes his chances at the start.



CATTLE BEFORE AND AFTER FATTENING AT PENNSYLVANIA STATE COLLEGE. SEE ARTICLE PAGE 8.

No. 1. Lot No. 1 at the beginning of the experiment. Fed on the Pennsylvania ration of corn and cob meal, wheat bran, corn stover and mixed hay.—No. 2. Lot No. 1 at the conclusion of the experiment.

No. 3. Lot No. 2 at the beginning of the experiment. Fed on silage to limit of appetite, and 2.5 pounds cottonseed meal per 1,000 pounds live weight per day for 56 days. Same ration the last 84 days with ear and shelled corn to limit of appetite.—No. 4. Lot No. 2 at the conclusion of the experiment.

Some varieties produce better on a clay soil than on a sandy soil, and vise versa. This should be understood and the grower governed accordingly. But too much corn is planted that is only corn. It has neither strain nor variety. It is only a mongrel lot with no parentage or name. Right there is where one of the greatest handicaps to heavy yield occurs. Some varieties of corn produce stalks at the expense of the ear; they grow a heavy stalk 13 to 15 feet high, with probably an ordinary ear, on an average of one to every three stalks. There are other varieties that have been bred for yield and do it on a much smaller and shorter stalk, with a far less number of barren stalks.

If a dairyman wanted a cow to produce milk in quantity he would not accept a scrub or a beef type of animal. No, he would accept only such an animal as had been bred for milk production. Breed is just as essential in the vegetable world as it is in the animal world. But where am I going to get it, is the thought that naturally arises. Well, do not send away to some foreign section because you have heard or read about some wonder. Just look at home in and around your own neighborhood. No matter how well a corn may be doing in Ohio or Iowa or any other distant state, when transported several hundred miles and planted in a different soil, in a different clime and possibly a far different atmosphere it must be acclimated before it will succeed in its new locality. This often takes three or more years, and sometimes it will never acclimate. Hence, it is far better to begin with a variety or strain obtained near home.

I said there was a preference in varieties as to kind of soil best suited. Perhaps I had better say type. For example, the large pure yellow types and some of the white ones, too, prefer a good deep clay soil. Most of the white cap yellow dent types will do as well on a good sandy loam, while the eight rowed types, let them be yellow, white or red, will produce fairly well on poor soils, either clay or sand. They will also grow farther north and at higher altitudes because of their ability to mature their crop in from ninety to a hundred days.

Selection.—In selecting seed, keep these thoughts in mind: Select corn for seed uniformity. Do not be satisfied with corn because it is corn and because it will germinate and grow. Select for a uniform product. Next take one hundred ears and number each one from one up. Do the same thing with one hundred rows. Then plant one row from each ear, reserving the balance of the ears so numbered so that they can be told when the first crop is gathered. Plant this breeding plot on the west side of the field, preferably, because the prevailing wind is from that quarter, hence less cross polination from the rest of the field. Cultivate and fertilize the whole breeding plot exactly alike. Observe the behavior of the different rows. I venture the prediction that some will grow two feet taller than others, possibly its neighbor. When the breeding plot is all matured, gather each row separately and weigh. You will find some one or more rows that have produced almost if not quite double the corn from the poorest row. Cast aside all but the high-yielding rows whether it be one or half a dozen, and use only seed from the high-yielding rows. In selecting seed, the whole plant should be taken as a unit, and not the large ear. The grower should take into consideration the height of the stalk, where the ear is placed thereon (it should not be too high up). The leaf surface should be considered, also the vigor and sturdy character of the plant together with yield. Repeat the breeding plot yearly, using the balance of the high yielding rows to plant the main crop so far as it will go. There will be a ready market for a surplus of quality.

I am aware that any advise or method advanced by agricultural writers that involves more work for the farmer during the busy season is not highly acceptable, but there is so much to be gained for the outlay in time consumed in this matter that any corn grower of any large proportion ought to consider it. I am quite sure that by adopting a breeding plot, one acre could be cut out of every five now planted and still more corn produced. In a corn section it might pay better to have one man do the breeding for a whole neighborhood and pay him for doing the work. The main thing, however, is to get the work done. In a later article I will take up cultural methods.

Farm Crop Notes

By
R. P. Kester

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

THE OLD FOLKS AT HOME

What Shall They Do?

I have a letter reciting a situation that is found all too often and for which a satisfactory solution is hard to find. This farmer and wife, with the aid of their sons, have for years been conducting a dairy. Their farm, rotation, crops and equipment have been adapted to that business. They know the business and have been successful. Their three sons were sent to an Agricultural College where they graduated, and, as is very often the case, took positions elsewhere, or went into business for themselves, anyway they did not return home. The parents are past middle life and find the burden of dairying too much for them to continue. What shall they do? Hundreds of parents, similarily situated are asking the same question.

It is not sensible to blame this condition on education and condemn agricultural training as being the cause, as we often hear done. The time comes in the life of every active, energetic young man when he feels it his duty to act independently and take up the work that seems to him most promising, and where his chances for success seem brightest. This is his right and his duty. If the home farm seems to be the place, and his parents give him the encouragement and the opportunity, he will likely go back there. Too often we find the father who has been hard working and successful unwilling to share the management with his sons or to make any changes in methods in deference to younger or newer ideas, and he soon finds himself and wife stranded and alone. The writer of the letter referred to does not hint the above as the reason why the boys failed to return, and probably it is not, but whatever the cause the question, which is a common one, remains to be answered: What can they do successfully and still conduct their farm and keep their farm home?

HOME OF GEO. H. BROWN, LANCASTER CO., PA.

In the first place, I do not consider parents under any obligation to keep and maintain all the land of a big farm after they are deserted by the children. It seems foolish as well as pathetic to see an aged couple slave away trying to run and manage a big farm as they did when younger and when raising the family. Any couple with a home and simple tastes can easily make a living on a very few acres by adopting a line of farming suited to their strength and opportunities. Sell the surplus land. Property is a curse when it makes slaves of its owners.

I know of one farmer in Pennsylvania who, tiring of the dairy business, procured some good grade Shorthorn cows and crosses them with a good Aberdeen Angus bull. This cross produces a good beefy animal of the Angus type which he makes weigh about 1,000 lbs at a year old, when he disposes of them profitably. Hay, pasture and silage is the line of farming. Little or no work of milking is involved.

Another farmer has turned his land to the production of hay, with the exception of a small acreage for light farming. By the method of top-dressing he produces hay several years in succession without replowing. He applies 300 or 350 pounds per acre of a fertilizer, analyzing 6-7-5, made by mixing together 800 lbs nitrate of soda, 1,000 pounds of acid phosphate and 200 pounds of muriate of potash. Apply when grass begins to grow in spring.

Hog raising by the alfalfa route is a possible road to success. Where alfalfa will do well hogs are raised on alfalfa, water and corn. Different plots are kept growing and hogs are changed from one to another. Specializing in crops that are adapted to soil and conditions is easier than general farming and dairying.

The advice to all in the situation under discussion is, make such change in operations as will make life easier, even tho it makes a change in the customs and breaks the traditions of a life time or of generations. Get from under the load before it crushes you, as it may in spite of all your doggedness. Adopt the simple life and live it in peace that your active life may have been worth while.

Some Questions

Nixon, Pa., has a piece of clover that did not make a stand, or was hurt by dry weather, and asks best way to grass it this spring.—Sow grass seed this spring when dry enough to harrow, and harrow in with a light spike tooth harrow.

J. D. H., wants to know what value phosphate rock has for Pennsylvania soils; also how he can get information about the kinds and character of soils of the state.—Acid phosphate has a value when mixed with stable manure or other organic matter whose decay will make the phosphoric acid available. The acidulated rock, acid phosphate, is preferred by most farmers as the plant food is already made soluble. As to the soils of Pennsylvania and their character, send to the Department of Agriculture, Washington, D. C., for the map of Soil Survey naming your section of state.—R. P. K.

IMPROVING QUALITY AND INCREASING PRODUCTION OF TOBACCO.

A strip of limestone soil extends thruout southern Pennsylvania, embracing parts of Lebanon, Dauphin, Chester, York and Lancaster counties. This section is especially adapted to the growing of tobacco. The last few years have been rather unsatisfactory to tobacco growers, due to the low prices received. The growers are unorganized and the buyers and packers invariably claim light demand, slow sale, overproduction or poor quality, when buying. While such conditions exist it is up to the growers to cut down the acreage, increase the production per acre, and at the same time improve the quality. In these days of high-priced labor and high priced farms, for nearly all farms where tobacco is grown extensively are worth $100 to $250 per acre, one acre wisely cared for will bring more net income than two carelessly handled.

To George H. Brown of southern Lancaster County, belongs the honor of having grown one of the largest crops of tobacco ever raised in this section. His farm lies to the south of this limestone section where the soil is supposed to be somewhat below the standard in fertility and productivity. Yet Mr. Brown grew 16,057 pounds of tobacco on 5½ acres, averaging over 2,900 lbs. per acre, which brought the handsome sum of $1,725.80, or about $313.78 an acre. Mr. Brown starts to prepare for his tobacco crop by plowing down a good heavy sod for corn the year previous to planting to tobacco. Crimson clover seed is sown among the corn at last cultivation and by the following spring this heavy growth of green clover, and aided by a liberal application of good barnyard manure, furnishes the means for securing an abundance of humus for the following tobacco crop.

In May, after the clover has made sufficient growth, the land is plowed to a depth of 8 or 9 inches and is immediately disked once or twice to fine the ground before it has time to dry out or become hardened. The fertilizer is then applied on the top with a lime spreader. The fertilizer is mixed at home in the following proportions per acre: 100 pounds high grade sulphate of potash, 250 pounds acidulated rock and 700 to 800 pounds cottonseed meal. This is the amount applied on each acre. The ground is then harrowed with the disk until the fertilizer is thoroly mixed with the soil. Just before the last cultivation, previous to planting, 1,200 to 1,400 pounds of hydrated lime are applied per acre. The lime has a tendency to check the dying off of the leaves which so often occurs, especially during dry weather. It is doubtful if lime pays if put on soil deficient in humus. On heavy, sour soils, this amount is far too small.

Mr. Brown declares that there is nothing better for preparing tobacco ground than the double-action disk harrow. Do not make the mistake of using one larger than your team can handle to advantage, as all double-action harrows pull very hard if the ground is cut as deeply as it should be. The deep disking puts the ground in excellent condition for planting and also cuts and mixes the crimson clover sod and manure with the soil where it readily decomposes. Where crimson clover will not make a good stand, rye makes an excellent substitute, but you will need to put more nitrogen in the fertilizer and a small additional amount of lime on the ground.

Mr. Brown warns against putting off getting the bed ready for sowing the seed, as a great deal depends upon having the young plants ready to transplant at the right time. Start the preparation of the seed-bed the fall before, by digging or plowing down a good heavy coat of manure. By the following spring, after the freezing and thawing of winter has mellowed the ground, it should be in fine condition for its second digging and final preparation for the seed. A teaspoonful of seed is sown in a bed 16 feet long by 6 feet wide, and one such bed is sown for each acre planted. If all the seed grows, it does not require nearly this much space for an acre, but it always pays to sow plenty of seed as the cost of growing the plants is very small. Mixing the seed with cornmeal or bran greatly facilitates its distribution. If you get the seed too thick, thin out as a weak, overcrowded plant gives a poor account of itself in the field.

After the ground has been thoroly prepared Mr. Brown plans to transplant as soon as possible after all danger of frost has passed. With early planting one may have time to replace those killed or injured by the cutworms and still have the tobacco harvested before danger of frost in the fall. It also enables the plants to escape the ravages of the tobacco split-worm, or larva of the potato tuber moth, to a large extent, as the late broods are the most destructive.

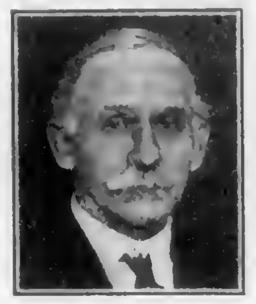
Transplanting is done with a planter. The rows are made 3 feet, 10 inches apart and the plants are planted 22½ inches apart in the rows. This is the distance usually observed for the Pennsylvania seed leaf and the large growing varieties. Mr. Brown grows the Connecticut narrow seed leaf almost exclusively; sometimes an acre or more of Havana is grown. When growing Havana tobacco and kindred types he plants 18 inches apart in rows. When planting in ground of only moderate fertility, he plants the large growing varieties 28 to 30 inches apart in the rows and small-growing varieties 22 to 24 inches apart. When planted 3 feet, 10 inches by 22½ inches apart, it requires a trifle over 6,000 plants for an acre.

As soon as the plants have started to grow, the cultivator is started and the ground is kept constantly stirred, no crust being allowed to form until the tobacco becomes too large to permit further cultivation. The ground about the plants and in the rows is also kept loose with hoes until the tobacco becomes too large. Few men agree on the right distance to top the tobacco. It should never be topped as to leave over 22 to 24 leaves to the stalk. Sixteen leaves will be nearer right than 20 for a backward season. If the tobacco is topped too high the bottom leaves will be ready to cut a great deal sooner than the top ones. An immature leaf has a poor flavor and lacks weight.

One of the principal causes of the poor yields and poor quality is the neglect to keep the suckers pulled. In looking over tobacco fields of Lancaster and Chester Counties I have often seen suckers 10 to 14 inches long. Do not let them grow over 8 inches long if you can possibly avoid it. The suckers sap the vitality of the plants just as watersprouts sap the vitality of the apple trees. One neighbor keeps the suckers all pulled out before they reach a length of 6 inches, and at selling time his tobacco weighs 300 to 400 lbs. more per acre than some others whose tobacco at cutting time looked as large if not larger, but who had let the suckers grow until they were 10 to 12 inches long. When pulling suckers do not forget to look for tobacco worms, as hand picking is the most satisfactory means of dealing with them.—George W. Conrad, Lancaster Co., Pa.

Commission Merchants and the 35-Cent Dollar---III.

By FRED W. DEAN, Susquehanna Co., Pa.



After going before the local grange with the evidence I have presented in previous chapters, I went before the Pomona grange. But I soon discovered that the grange is not organized along offensive and defensive lines. It has no money to spend and no legal advisors. I then decided to lay my evidence before a leading New York City daily paper. The paper was genuinely interested in the evidence I had to present. It was arranged that we continue our investigation the following winter. Accordingly in January and February of 1913 I rented a P. O. Box at a small near-by office under the name of Joel Bailey and opened up correspondence with various commission merchants of the city. I secured a contract with each firm to handle my eggs upon a commission of 5 percent upon gross sales. The newspaper publishers detailed a man to work the city end of the deal.

Stickers for identification were printed and glued to each crate, but it was soon discovered that these stickers were all mutilated to such an extent that indentification by them alone was almost impossible. We then put a wire around the ends as well as the middle of each crate and stapled it fast, ostensibly to hold the crate together but really to serve as identification of crates. That served the purpose and the work went on. But we soon discovered that the commission merchants were loath to sell goods to a stranger, so much so that the publisher's representative secured only a portion of the shipments. In one case he was openly accused of being a "spotter", which, of course, he vigorously denied. What few eggs we were successful in securing showed the usual shortage of about 12 to 15 percent.

It was the intention of the publisher to carry on this work for a year and follow it up in all lines, and especially on perishable fruits like berries, peaches, pears, etc., where we suspected that the shortages were much greater because of the chance to report the goods received in bad order, sold to peddlers for cash, no account kept of the names of purchasers, etc. At this time the Cole Commission Merchants' bill was pending at Albany, and it was expected to go thru with a rush. But the commission merchants got busy at Albany and the bill was delayed. It was thought best that we close our deals and present what evidence we had. This was done, and whether or not it had an effect, the bill went thru. But the commission people had succeeded in pulling nearly all the teeth out of the bill in committee.

We had evidence of graft on two counts each on four firms. We secured indictments of two counts each against three firms. One house escaped upon a technical point. I had their literature representing that they handled butter, poultry, veal, eggs, etc. But when the publisher's egg man called to buy eggs of this firm, he was told that they did not handle eggs, but was referred to a firm which we will call Mr. Blank. Mr. Blank occupied rooms in the same building. When our eggs arrived at the house of our first dealer, they went straight thru the building to Blank's place of business. Here the publisher's man purchased eggs of this "broker" at four cents a dozen above the price reported to me by the original house after commission and expressage were deducted. This, of course, added four cents per dozen to the cost of the eggs to the consumer, the broker being no nearer the consumer than the commission merchant was.

We also discovered that these commission merchants, like all others, were opposed to selling eggs in the original package, and wanted to repack the goods into another crate. One firm insisted upon this procedure and absolutely refused to sell the eggs until they had taken them to a loft directly over the salesroom and repacked them. The publisher's buyer had to content himself with purchasing another crate to divert suspicion, for which he paid 28 cents per dozen. My returns showed sales for the same day at 21 cents per dozen for the same class of goods, less 5 percent commission and expressage; thus showing a shortage of 7 cents per dozen. The morning following the indictments secured upon marked crates, the writer accompanied by the publisher's buyer took a stroll thru the produce district and we found an army of helpers busy destroying all special marks on packages and crates. Why is this necessary if honest returns are being made upon consigned goods?

We figured up the probable graft on eggs alone, based upon half the statistics of arrivals during the preceding year and half the average graft shown by the cases tested out. The total amount thus shown was $2,050,000 per year on eggs alone. I estimate that 90 percent of the farm produce going into a large city goes there upon a commission basis, and I verily believe that the producers and consumers of this country are cheated out of one million dollars a day. Give it all to the farmer or all to the consumer or divide it equally between the two and you have a saving of $500,000 daily.

Owing to the sudden death last July of the man on the publisher's staff who conducted the city end of the deal, the indictments were dropped for want of sufficient evidence. It was the most difficult case I ever had to secure evidence in, and when we got it, we were not able to make the use of it we had hoped.

NOTE.—The last article in this series will appear next week.—The Editors.

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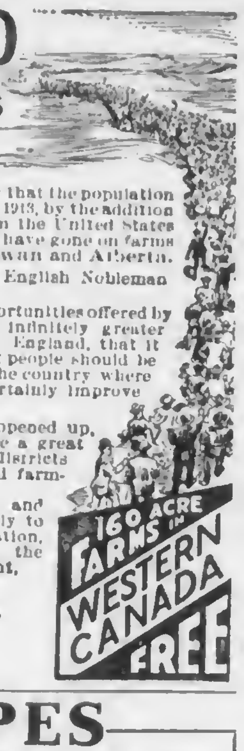
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Horticulture

HOW AND WHEN TO PRUNE SHRUBBERY

Not a little is added to the attractiveness of the farm home if the lawns and borders are well kept. The hardy plants and shrubs if allowed to grow in their own way soon become scrawny and unsymmetrical, but with a little thought and attention it is a very easy matter to keep them properly pruned and trimmed. Uniform growth and abundant bloom are the ends sought and these are largely in the control of the gardener. The chief points in successful pruning are the removal of superfluous shoots and branches, the ruthless cutting away of dead wood, and the clipping off of rampant growth to head in the bush and shape it as desired. In the main, however, it seems to the writer that Nature will take care of the shape pretty well if allowed to do so. Natural, rather than formal shapes are best unless one has in mind some definite object.

The question of when to prune depends upon the bush, that is, upon its time of flowering. Spring bloomers should not be pruned until after the blossoms have dropped. If pruning of these is done in the dormant season it is quite probable that many of the best flowering branches will be cut away. Early blooming shrubs form their buds in the fall, hence the best time to prune is in the summer. Shrubs of this class are: Lilacs, spireas, snowball, mock orange, deutzia, exochorda, forsythia, flowering almond, wisteria and rhododendron. There are many others but these are the best known and most commonly planted. Flowers are borne at the ends of terminal or lateral shoots and in order to encourage a good growth of these shoots it is well to clip the ends of the strong branches after the blossoms fall. This keeps the bush from assuming a tall straggling appearance and at the same time increases the number of flowering shoots. By doing this and keeping the dead wood out, with the occasional cutting of a branch where they grow too thickly, the spring-flowering shrubs will be kept in good form and an abundance of bloom and thick foliage assured. The object is to encourage a vigorous growth in the summer and early fall.

FIRST YEAR STRAWBERRIES UNDER CLEAN CULTIVATION.

In the case of such shrubs as the hydrangea, roses, althea, hibiscus and tamarix, pruning is best done in the late winter or early spring, before the sap starts. Some do this in the autumn after the leaves fall. As the flower buds develop on new wood of the current year's growth, the object is to encourage early and strong shoots to develop. Pruning of these is done in the same manner as the early-flowering. The difference is in the time of doing it.

The pruning of roses is more difficult than of some other shrubs, also it is of more importance to the plant. The object is to produce flowers rather than symmetry of form or beauty of foliage. To encourage strong shoots on weak-growing sorts, severe cutting-back should be practiced, while on the vigorous kinds less pruning is necessary. Note carefully the condition of the canes and cut them off just above strong buds that point outward. This will encourage the bush to spread rather than to grow closely together and more flowers will be the result. The new shoot will grow the way the bud points. Make a clean slanting cut with a sharp knife. Do this while the roses are still entirely dormant.

Some of the tenderer roses, such as the hybrids and teas, which are usually protected during the winter, must be severely pruned. Much dead wood will be found and often it will be necessary to cut quite to the ground. At any rate remove all dead canes and cut back the live ones at least one third. It is vitally necessary to these roses in a cold climate that they be pruned. A frequent cause for failure with them is the fear of cutting out partially winter-killed wood.

As a rule the climbing roses do not need much trimming but it is necessary occasionally to prune out the wood that no longer produces flowers. A rule sometimes followed is the cutting out of all except the last season's growth and training the new shoots as desired. This method is a very good one for some situations.—Charles H. Chesley, Strafford Co., N. H.

MISTAKES OF AN ONION GROWER

In a letter requesting advice on onion growing a correspondent has outlined the faulty methods which contributed to his failure with this vegetable; comments upon which may prevent others falling into the same fallacies.

Onions were grown on the same acre of land for eight years in succession. The yield the first year was about 200 bushels, reached 474 bushels the third year and gradually declined to 130 bushels in the last year. During the first five years fertilizer was used. It was then discarded and thereafter the land was treated with stable manure. In the first year a heavy application of lime was made. In the first five years the best seed obtainable was used but in the last three years a lower grade of seed was sown. During the latter period, also, planting which had previously been done much earlier, was delayed until the tenth, twelfth and fourteenth of May.

Considering what was done it is not strange that both the yield and quality of the crop declined. What effect the lime had I cannot determine but the change from fertilizer to stable man-

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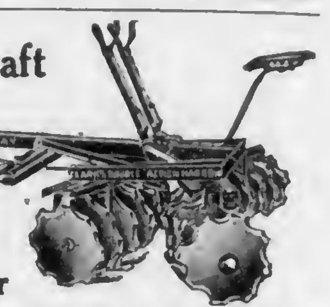

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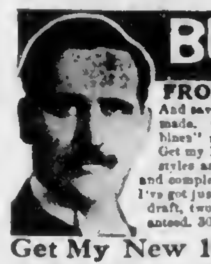

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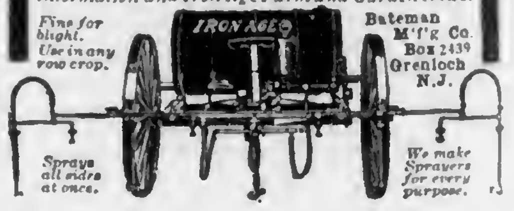

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was a serious error. Not only was re a great decline in the yield but ggots, which had appeared the year ore the change was made, multiplied idly and in the last two years were y destructive. The quality of the declined about as much as the ld. This was partly due to the of manure and partly to the use poor seed and late planting. The p was mixed so far as varieties were cerned, and in the last seasons only out one-half of the plants formed d bulbs.

he use of stable manure on a field the year it is to produce onions highly objectionable and planting ons in land that is badly infested h maggots is almost sure to be fa- to success. When there are only few of these pests the injured plants n be pulled and burned, but when the ack is general it is best to give the d to other crops for two or three rs. There are numerous "reme- s", it is true, but I know of none t can be made profitable on a large le. Inferior seed will produce a or crop or no crop at all, and late wing is an invitation to disaster ich is seldom declined.—Elliot.

TREATING OLD STRAWBERRY PATCHES

As a rule I get more strawberries the cond year of fruiting than the first. metimes I get a fair crop the third ar. I have tried different methods treating old patches, but the follow- g one has given me the best satis- ction.

After berry picking season is over e strawberry vines are mown off th a mowing machine with the mow- g bar set rather high. After the nes get dry they are raked into indrows with a horse rake, and a fire arted at one end of the windrow om which the wind is drawing By rning the vines any plant diseases them are destroyed.

A one-horse plow is then run along ch side of the matted rows, throwing a furrow 4 or 5 inches deep into e space between the rows. Enough the matted row is turned with the o furrows to leave remaining a strip ly about 15 inches wide.

The furrows are rolled down with a ller. Afterwards a spike-tooth har- w is first run lengthwise of the fur- ws, then cornerwise and crosswise. e harrowing process is repeated until e ridges made by the double furrows ve been leveled, and until about an h or so of earth has been dragged on the portion of the strawberry row t turned with the plow. When the rk is properly done the piece does t resemble a strawberry patch, but ther a piece of ground fitted for anting.

The "secret in the job" lies in get- ng the crowns of the old strawberry ants covered with a little fresh earth, hich causes them to start new root owth. With favorable weather the owns soon send up thru the ground ew plant growth, and the patch soon esembles a new strawberry patch set the spring. This season I expect to p-dress the piece with probably about pound of complete fertilizer per re with a fertilizer sower, just be- re I finish harrowing the soil cross- se the rows.

After the rows show up again, I use one-horse cultivator to cultivate be- ween the rows. In the fall the old atch has been taken for a new one. Last season on account of scarcity f rain all summer, treatment of old rawberry patches was not so success- ul, but with more favorable weather he above method gives good results. I treat both my one and two-year old strawberry patches in this manner when the latter is to be held for the third year picking; but the two year old patches get a top-dressing of stable manure the following winter, as strawberry beds need considerable extra plant food the third year of fruiting. Manure also furnishes an excellent mulch for protection to the plants during the freezing weather, as well as conserving moisture for the plants all thru the berry season.

After the third crop of berries is picked, the patch is turned, and some late crop planted to rot up the sod well for setting the strawberries again another season. In this way it does not matter so much if there be grass or weed seeds in the manure mulch; but on all patches to be treated after berry picking for another crop of berries, nothing but clean straw is used to mulch the plants with.—C. R. Weidle, Erie Co., Pa.

CARING FOR THE LAWN

Now is the time to care for the lawn, while the ground is still soft, and the grass is beginning to form a new green carpet.

Good lawns are the basis of all artificial landscape. There is nothing which gives a house a finer setting than a good lawn. A little stretch of even, green grass will soften the harshness of a city dwelling, or change a country house into a country home. But, a poor lawn produces only a desolate air of poverty and neglect.

Contrary to general opinion, grass like everything else, must be cared for. The man who wishes a good lawn must give it attention, and a little attention right now is worth a great deal later on.

In caring for the lawn, rolling is very important. The surface is thus pressed down and leveled; roots are forced back into the soil; and the surface is made compact. In fact, heavy rolling in the spring lessens the danger of summer burning, and the necessity of frequent summer watering. A good one-man roller for this purpose should weigh about 300 pounds, covering a width of twenty inches. Rollers made in two sections are to be preferred, for they are more easily operated, and tear up the grass less than the ordinary type when turned about. Two-man or horse rollers may be used on large areas. Where horse rollers are operated, be sure to use pads on the horses' feet.

The fall is the ideal time to remove weeds, yet for the lawn which has been neglected, it is best to get rid of the offenders before they go to seed. Careful mowing will control many varieties. Such weeds as plantain, dock, and dandelions, however, should be dug out with a knife. If trouble is experienced from their growing again, a small crystal of iron sulphate dropped on each root as it is cut makes certain destruction of the plant.

Where the grass is thin it should receive additional seeding. For general purposes a mixture consisting of one part English rye, two parts Rhode Island bent, and three parts Kentucky bluegrass by measure, is very good. If the grass is not very thin one quart of the mixture to every 100 square feet should be sufficient. The use of clover in the lawn is a matter of personal choice. For those who care o use it, a small quantity will give an appearance of thickness. In shaded places, and under trees it is well to substitute crested dog's tail for a mixture. Some trees feed so near the surface that it is useless to attempt to grow grass under them. Here English ivy will cover up the bare spots.

For fertilizing the lawn nothing will be found superior to poultry manure. It is fine, and easily taken into the soil. Sheep manure may be substituted with good results. In either case the application should be light. For those who prefer a commercial fertilizer, bone meal is especially to be recommended, as it contains the elements most needed, and becomes available during an extended period.

In watering, the usual tendency is to sprinkle every evening with a hose. This method is not to be commended for it merely wets the top soil, thus drawing the roots close to the surface and weakening the plant. Water only when it is absolutely necessary. Then it is best accomplished by removing the nozzle from the hose, and allowing the water to flow on the same spot for about an hour, when the hose is shifted, and another area watered. Watering by this method may be carried on in sunshine without harmful results.

By observing these fundamentals, and by a reasonable amount of time spent in cutting, and raking the grass, and trimming the borders, the appearance of the lawn will repay the owner many times for the money and labor expended upon it.—R. P. Marshall, State College, Pa.

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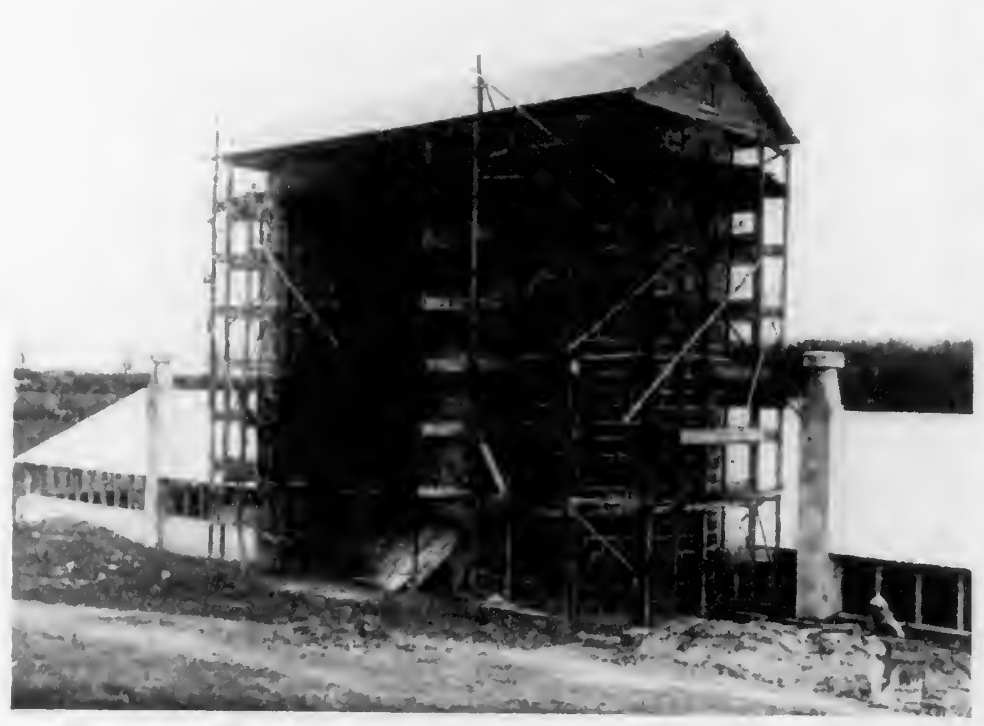
The Dairy

THE NEW SHARPLES DAIRY PLANT

I have just returned from a visit to the up-to-date Sharples dairy plant in Chester County, Pa. The plant comprises all that is new and practical with fads and frills eliminated. The dairy building comprises a good old bank barn, now supplying storage room for dry roughage and, in the basement, storage room for concentrated feeds and for box stalls for young or sick animals. The main cow stable is a wing extending to the east about 160 feet, having a capacity of 100 cows. The cows are arranged in two rows; rears to the central isle and heads to the outer walls. The floor and manger is practically one continuous concrete casting, cleverly laid. The flushing out of the manger or gutters can be done if necessary.



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Each silo is 42 feet deep and 16 feet in diameter, holding 200 tons of silage.

A walk or driveway of about 9 feet extends between the gutters the entire length of the stable; and along this, feed, manure or absorbents are carried in cart or hanging car. At one side are the silos, modern tile structures, and on the other side is the milk and power house, with full equipment to secure the purest and best milk possible to meet the demands of a certified milk trade. The ceiling of the stable is 10 feet in the clear, and is smoothly plastered.

The ventilating system is a modification of the King method, consisting of in take transoms near the ceiling, which may be opened or closed at will, and out take flues having two vents, one near the floor and the other near the ceiling. The latter one is designed to relieve the stable of warm air near the ceiling in extremely warm weather. Light is admitted all around, except at the silos. The glass is very heavy wire glass and is very liberal in space. The stanchions are full metalic, as is also the water fountains in each stall.

The liquid manure is conducted from the gutters by gravity pipes to an out-door reservoir, from which it is pumped into a tank wagon and taken to the fields. It is the intent of the owner to concrete the barn yard where the manure will be dumped at times when it is not desirable to go direct to the field with it. We were told that here in this plant it will be demonstrated that a high quality of milk can be produced without necessarily increasing the cost of production, and a strong factor in this scheme is the instalment and constant use of a milking machine, now in daily and satisfactory use on the herd.

The herd has not been assembled for beauty or high production, but is a widely mixed lot. At a glance we recognize a sprinkling of Holstein, Jersey and Guernsey with numerous hints of scrub forbears. With a mixed herd the practicability of the milking machine can be more nearly determined, as that sort of animals more nearly represent the run of the farm stock. The herdsman and manager on the above place is Mr. Price, a short course student from Pennsylvania State College, and is wide awake and a student of dairy conditions.—D. H. Watts, Clearfield Co., Pa.

MAKING BUTTER VS. SELLING WHOLE MILK

The arguments of milk condensary agents that selling whole milk puts more money into farmers' pockets than making butter, the high cost of mill-feeds and the very low market for butter for the time of year, due to importations of foreign butter, use of oleo, or what-not, have caused many farmers to give up butter-making. The dairy farmers of Bradford County have made butter for years, have paid off mortgages and are generally prosperous. But they are quitting creameries that are making butter, and are selling their whole milk, which is the most exhaustive system of farming known except selling the crops direct from the farm.

I have hesitated in entering a discussion of this kind because, as some of your readers know, I operate a private creamery, and for that reason I may be thought to be partial to the butter side of the question. But I want to present some figures on the subject which will speak for themselves. I have held for years that a creamery ought to make butter at 2.5 cents per pounds and give an over-run of from 14 to 16 percent above the Babcock test. In 1908, I, with the aid of my brother, built and equipped a small creamery to make the butter from the two dairies. Some neighbors wished me to make their butter and I wanted to have an opportunity to prove that a man can run a creamery on the basis stated above. I believe that upon this basis it is more profitable to make butter and sell it at 25 cents per pound than to sell whole milk testing 5 percent fat at $2 per hundred pounds.

One hundred pounds of milk testing 5 percent fat would make about 5.8 pounds of butter, which, at 25 cents per pound, would sell for $1.45. If the se-

tor is set to take a 30-percent cream ch I believe to be a fair average, would have about 17 pounds of m in 100 pounds of 5 percent milk, ing 83 pounds of skim milk. The ensary agents try to tell us that milk is worth only about 22 cents cwt. I know that this value is al- ther too low. Experiments have been e to determine the feeding value skim milk when fed to pigs, and e tests show that where 2 pounds ilk are fed with one pound of mill- , the value of the skim milk is er 60 cents per cwt. Here is where y of us make a mistake. We feed much milk in proportion to the mill . When improperly fed the milk not be worth much over 22 cents cwt., but the skilfull feeder will e it worth more nearly 60 cents.

n feeding skim milk to purebred es its value is still further increas- Three years ago we sold 10 calves $75 per head. I tried to keep an rate record of milk, roughage, and short period on pasture. You who e tried to keep records on growing es know how difficult it is. But h the best records possible, I de- ined that those calves yielded me t $1.75 per cwt. on the milk fed . But let us take the 60 cents as ir value of the skim milk.

ontinuing the above calculation, 83 nds of skim milk at 60 cents per , would be worth about 49 cents. 17 pounds of cream we have 5.8 nds of butter and 11.2 pounds of er milk. Butter milk is worth as h as skim milk for pig feed; there- 11.2 pounds of butter milk would worth about 6¾ cents. In addition t agricultural chemists agree that n we sell a ton of whole milk we ove about $1.89 worth of fertility; on of skim milk, $1.99; a ton of er milk, $1.99; a ton of cream, 2 and in a ton of butter only 32 ts. The skim and butter milk tain the larger amounts of fer- y. At $1.99 per ton as the fertility e of skim milk, the 94 pounds of milk and butter milk would repre- t an additional value of about 9.3 ts.

umming up the value of the 100 nds of whole milk testing 5 percent , we have the following: Butter, 45; feeding value of skim milk, 19 ts; feeding value of butter milk, 6¾; ility value of skim and butter milk, cents. Total value, $2.09. These res prove, I belive, that it payes ter to make butter on the farm and it at 25 cents per pound than to whole milk at $2 per cwt.—Leon VanNoy, Bradford Co., Pa.

ASTEURIZING CREAMERY BY-PRODUCTS

he Pennsylvania legislature in the 3 session enacted a law requiring t: "Every owner, operator, or man- r of a creamery, cheese factory, re- ving station, or skimming station, ll, before returning to or delivering any person or persons any skimmed k or separator slop, to be used for d or feeding purposes for calves or ne, cause such skimmed milk to be roly pasteurized by heating it to least one hundred and seventy-eight rees Fahrenheit."

ircular No. 28, recently issued by Pennsylvania Livestock Sanitary ard illustrates and describes a simple inexpensive apparatus for cream- and skimming plants to heat milk products to the required tempera- e with a minimum of steam. A spe- warning is given against permitting slime and foreign matter removed the separator or clarifier from get- g into the skim-milk or into streams. should be disposed of by burning. e circular is for general distribution.

MANY MILES FROM SHIPPING POINT

Place For Dairying

In Franklin County, Pa., is a long and fertile stretch of land known as Path Valley, extending from the village of Concord in northern Franklin County to near the Maryland line. Path Valley is stretched out between the Blue Mountains on the east and the Tuscarora Mountains on the West. The farmers of this valley are a thrifty lot and have been delivering corn, wheat, hay, etc., to the railroad at distances varying from a few miles to 25 to 30 miles, and now there is an awakening that will materially change the methods of farming in the valley. In place of drawing the heavy, crude product to market many farmers see that the proper thing to do is to stock the farms and pastures of the nearby mountains with beef and dairy animals and feed the bulky roughage on the farms and sell the less bulky finished products as beef, butter, milk, etc., in the distant market. Accordingly, methods of cheap crop production are being studied and discussed and many silos are going up in the near future.

At the last evening session of farmers institute at the village of Dry Run, 15 miles from a railroad, 600 people attended. The audience was divided and taken into another room, where the subjects of poultry and organization were discussed.—D. H. Watts.

GOOD HOLSTEIN PRICES

At a public sale in Lehigh County, Pa., February 28, without special advertising, no catalog and only common farm sale posters four registered Holstein-Friesian cows sold at the following prices: Daisy De Kol of Lehigh No. 64941 H. F. H. B., for $277.50; Daisy DeKol of Lehigh 2d No. 114282, $300; Linda DeKol of Lehigh No. 64939, for $225 and Daisy Hengerveld of Lehigh No. 102793 for $235.

These were large cows, good individuals and in good condition. I consider the price very good, taking their breeding into consideration. The same prices can be obtained in any section as farmers in general are after purebred Holsteins. In my opinion this sale has been an eye-opener to a good many farmers in Lehigh County who attended the sale. It is surely foolish to breed common scrub cows when it costs no more to raise purebreds that bring big prices. There is no trouble to sell registered baby Holstein heifer calves by the car-load at $100 each.—W. M. Benninger, Northampton Co., Pa.

MILK-TESTING EQUIPMENT

I was much interested in the article in a recent issue of the Pennsylvania Farmer discussing variations in milk tests and inaccuracies in milk-testing equipment. I was sufficiently interested to have milk tested by one of the most reliable dairy laboratories in this state as a check upon our own tests. This report of that test is as follows:

"Sample of milk submitted us for butterfat determination resulted as follows: Date, March 17; sample milk; fat, 5.35 percent; total solids, 13.53 percent.

"This sample of milk was submitted us by Mr. Brownback to be tested in check with him. We used his test bottle and his pipette in check against our test bottle and our pipette. His bottle gave the result of 5.4 percent; our bottle gave the result of 5.35 percent. Very Truly, ———."

The name and address of the laboratory making this test will be supplied upon request by Pennsylvania Farmer.—G. E. Brownback, Montgomery Co., Pa.

Aryshire Breeders Organize.—An organization of Aryshire breeders has recently been formed in northern New York with Geo. H. Converse of Woodville as president and A. F. Spooner, of Richville, as secretary-treasurer. There are vice presidents from each of the four counties interested. Local clubs will be organized thruout these counties.

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CREAMERYMEN, WHO ARE DEPENDent on their separators for business success, have long since found out the difference between De Laval and other separators, with the result that De Laval factory separators are almost universally used the world over today.

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THESE ARE THE REASONS WHY De Laval Separators are cheapest as well as best, why thousands of other machines are yearly being replaced with De Lavals and why their use is rapidly becoming as universal on the farm as in the creamery.

IT SHOULD BE REMEMBERED, moreover, that if first cost is a serious consideration a De Laval Separator may be bought on such liberal terms that it will actually save and pay for itself, as many thousands of them have done.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

International Special Dairy Feed
MIXED WITH CORN AND OATS COWS INCREASE ONE-THIRD
INTERNATIONAL SPECIAL MOLASSES DAIRY FEED
Mr. J. P. Goodall of Capron, Ill., writes us as follows: "I have used International Special Dairy Feed for two years, feeding 4 pounds per day mixed with ground corn and oats and by using your feed as above I have obtained an increase of one-third in milk production. My cows always keep healthy and eat with a relish."
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100 Head Pure Bred Holstein Cows, Heifers and Calves Crest Lawn Farms, Gustavus, Trumbull Co., O., at 10 A.M. Saturday, April 25, 1914
Many strong in the blood of King Segis, Pontiac Korndyke, and King of the Pontiacs, and a good number of these bred to King Pontiac Ormsby No. 53672, a son of King of the Pontiacs, now at the head of our herd. Animals tested by a competent State Veterinarian to go into any state in the Union if desired.
Gustavus is reached by Youngstown branch of L. S. & M. S. Ry. Stop at Kinsman, free hack will meet you there. Train 215 leaves Ashtabula, O., at 7:00 A. M., train 240 leaves Youngstown, O., at 8:00 A.M.
Catalogue on request. B. E. TOTTEN, GUSTAVUS, OHIO. P. O., Farmdale, O.
NOTE: Wm. Bakody, Youngstown, O., sells 90 head purebreds on April 27th.
W. C. Jewell, Kinsman, O., sells 90 head purebreds on April 28th.

Cattle Feeding in Pennsylvania.

Feeders Convention.

The first Cattle Feeders' Convention ever held in Pennsylvania or the East occured at the State Experiment Station, State College, Pennsylvania, Friday, April 3rd. This meeting was attended by a number of prominent feeders and cattlemen from different parts of Pennsylvania and Maryland. The general interest and enthusiasm shown by those present proved the meeting a decided success and the undertaking of holding a convention of this kind desirable in the interest of beef cattle feeding in the East.

This meeting afforded an opportunity for the feeders to note the results of the experiment conducted at the college and an opportunity to study the results first hand, rather than wait until reports were published later in the year. The success of the meeting will mean that this convention will become an annual event and should do much to create greater interest in cattle feeding and enlighten eastern feeders on the subject of more economical production of beef.

Frank Wood, an experienced buyer in the Pittsburgh market valued the cattle in the different lots on the basis of prevailing prices on the Pittsburgh market. The object of this was to determine the difference in value of the five lots that were fed different combinations during the winter. After placing a value upon each lot he discussed his reasons, which proved of great interest to all feeders present. After the cattle were valued the audience inspected the calorimeter and nutrition work conducted at the College under the supervision of Dr. Armsby. This part of the program proved interesting because of its close relation to the practice of cattle feeding.

At 11 o'clock those present assembled in the Agricultural Building and listened to an interesting discussion by Dean Watts on the progress made in the eastern part of the United States in live stock production and its possibilities along different lines, especially that of beef cattle feeding. Professor Tomhave discussed the results of the feeding during the past winter. A summarized statement had been prepared and each member was presented with a typewritten copy showing just what each lot had done since beginning the experiment November 15th.

In the afternoon the cattle were visited in the feed lots. Here the feeding and handling of each lot was fully explained and comments made on the different combinations of feed as used. The different lots were in each case compared so that visitors might have an opportunity to see why some of the lots were rated higher in value than others. Besides this discussion the details of the feeding and handling of each lot, the best individuals of the different lots and the desirable and undesirable points of the various individuals were pointed out and explained as indicated by the following table. the lots proved so interesting that practically the entire afternoon was devoted to this work.

Some interesting results are obtained as indicated by the following table. In Lot 1 the cattle were fed a combination of feed commonly known as the Pennsylvania feeding ration. This is composed of mixed hay, corn stover, a mixture of chopped ear corn or corn meal and bran, fed in the proportion of three parts corn to one part bran. This lot of cattle made the lowest total gain, but were the most expensive in the feed lot. The cost of producing 100 pounds of gain, based upon the feed price indicated in the table, in this lot was $13.43 as compared to $11.08 on Lot 5, which was the next most expensive lot. The necessary selling value of this lot in order to pay for the feed consumed, not including the pork produced, was $8.69 per 100 pounds, or a margin of $1.24. This high cost was in part due to the bran which was fed in the ration, to the cost of grinding the grain, the lack of silage in the ration, and the feeding of grain from the beginning in place of a greater amount of roughage as was the case in the other four lots.

SUMMARY OF FEEDING EXPERIMENT

Following is a summary of the feeding experiment. Rations were as follows: Lot 1, mixed hay, corn stover, bran, corn ear and corn and cob meal. Lot 2, silage, cottonseed meal and corn. Lot 3, silage, alfalfa and corn. Lot 4 mixed hay, silage, cottonseed, meal and corn. Lot 5, silage, alfalfa, cottonseed and corn.

	Lot 1	Lot 2	Lot 3	Lot 4	Lot 5
Initial value per cwt.	$7.45	$7.45	$7.45	$7.45	$7.45
Initial weight, lbs.	10,916	11,005	11,118	11,003	10,960
Final weight, lbs.	13,772	14,088	14,008	14,185	14,058
Total gain, lbs.	2,855	3,085	2,890	3,152	3,098
Av. daily gain first 56 days, lbs.	1.71	1.88	1.5	1.62	1.66
Average daily gain 140 days, lbs.	1.69	1.83	1.72	1.87	1.84
Feed Consumed:					
Corn silage		62,270	51,936	33,047	47,668
Corn stover	3,025				
Mixed hay	16,148			11,749	
Alfalfa hay			8,213		7,750
Cottonseed meal		4,312		4,294	4,250
Corn and cob meal	19,036				
Wheat bran	6,296				
Broken ear corn		7,976	8,106	8,083	7,930
Shelled corn		4,027	4,030	4,030	4,030
Total cost of feed	$383.56	$312.37	$283.92	$333.54	$343.47
Cost of roughage	100.89	108.97	152.49	128.34	141.55
Cost of concentrates	282.67	203.40	131.43	205.20	201.92
Cost per cwt. gain first 56 days	11.82	6.52	7.02	8.64	8.23
Cost per cwt. gain 140 days	13.43	10.12	9.82	10.58	11.08
Value of pork per lot	13.22	18.43	10.17	21.20	19.98
Necessary selling value not including pork	8.69	8.03	7.93	8.13	8.25
Rated value on Pittsburgh market	8.30	8.30	8.15	8.40	8.25

Feed based upon the following prices.—Corn 70 cents bu; bran, $25.00 ton; cottonseed meal, $34.00 ton; corn and cob meal, 75 cents bu.; mixed hay, $12.00 ton; alfalfa hay, $15.00 ton; corn silage, $3.50 ton; corn stover, $2.50 ton.

The cattle in Lot 2 were valued as high as those in Lot 1, but were produced at a margin of 58 cents instead of $1.24. This lot received silage as roughage and no corn during the early part of the feeding period. The cheapest gains made were those in Lot 3, where silage and alfalfa were fed during the early part of the feeding period and corn added to the ration during the latter part of the period. This lot was fed at a margin of 48 cents, but these cattle were not valued quite as high as the other lots.

Lot 4 received mixed hay, silage and cottonseed meal during the early part of the feeding period with roughage added during the latter part. They made the greatest total gain and were valued higher than any of the other lots. The necessary margin in this lot was 68 cents out they were valued 10 cents higher than any of the other lots. These cattle seemed to have more finish than any of the others on experiment.

Lot 5 was used as a check lot for number 3. They were fed the same ration except that cottonseed meal was added in addition to the alfalfa hay. The addition of this greater amount of nitrogenous feed made the final cost greater than the other lots with the exception of Lot 1. They were valued a little higher than the lot receiving no cottonseed meal.

A clearer illustration of the advantage and desirability of using silage in the ration for the feeding of beef cattle can not be found. It not only shows that beef can be produced much cheaper when silage forms a part of the ration, but also that heavier gains are made and that greater quality is secured. Also, that less grain feeding is required than where the silage is lacking. The results of this experiment should be a further encouragement for the eastern farmer to build silos in connection with steer feeding.

CATTLE FEEDERS ASSEMBLED AT THE FEEDERS' CONVENTION AT STATE COLLEGE, APRIL 3.

How The Steers Were Handled

Sixty two-year old cattle were purchased in Roane County W. Va., in the fall of 1913. These cattle were divided into five lots of 12 head each. In making these lots the cattle were divided equally, so far as possible, in age, type, breed, weight, quality and general condition.

The object of the experiment was to secure further information concerning the methods of feeding under Pennsylvania conditions; also, to make comparisons in the cost of the different combinations fed. The common method of feeding expensive feed was to be compared to the feeding of a large amount of roughage and cheaper feeds. With the increase in production of alfalfa in the East and the constant increase in price of cottonseed meal, it was deemed advisable to compare alfalfa hay and cottonseed meal as a source of protein for feeding cattle.

The five lots were fed as follows: Lot 1 received the common Pennsylvania feeding ration composed of mixed hay and corn stover as roughage, and cornmeal and bran as concentrates. They received all the mixed hay they would consume and in addition received four pounds of shredded corn stover daily. The corn and bran were fed at the rate of 12 pounds per head daily, the mixture being 2 parts corn and 1 part bran. During the first 56 days the corn was broken into small pieces; during the last period it was ground into corn and cob meal.

Lot 2 received corn silage as a sole roughage during the entire winter. Of this they received all they would consume during the first 56 days. In addition to this they were fed cottonseed meal at the rate of 2½ pounds per 1,000 pounds live weight, daily. During the last 84 days of the feeding trial this lot received, in addition, broken ear corn at the rate of 15 pounds per 1,000 pounds live weight or shelled corn at the rate of 12 pounds per 1,000 pounds live weight.

Lot 3 received corn silage and alfalfa hay as roughage, the alfalfa hay being fed in place of cottonseed meal or some other nitrogenous feed. The alfalfa was fed at the rate of 5 pounds per 1,000 pounds live weight. This was the only feed received during the first 56 days. The balance of period corn was fed in addition at the same rate as Lot 2.

Lot 4 was fed a combination of 20 pounds of corn silage per head daily and in addition all the mixed hay they would consume as roughage. Cottonseed meal was fed at the rate of 2½ pounds per 1,000 pounds live weight daily. This combination was fed during the first period. During the second part of the feeding period this lot received in addition the same ration of corn as received by Lots 1 and 2. The object of this lot was to compare the results when mixed hay is added to the ration of silage as roughage.

Lot 5 was fed the same roughage as Lot 3 but cottonseed meal was added to determine if it is necessary or beneficial to add cottonseed meal when a part of the ration is made up of alfalfa hay. Aside from this one change the lot was handled the same as Lot 3.

Each steer was numbered at the beginning of the experiment so that an individual record could be kept as well as group records. The cattle were weighed three successive days; at the beginning of the experiment, at the end of the first 56 days and at the close of the experiment. Group weights were taken every two weeks. All the cattle were fed in an open shed where they had access to good water at all times. Hogs were put in each lot to consume the waste from cattle.

Winter Steer Feeding.—Bulletin 167 of the Indiana Experiment Station at Lafayette, Indian, is a discussion of steer feeding experiments carried on at that station under various methods of feeding. Rations are tabulated and compared and definite conclusions as to values are drawn.

Studebaker WAGONS BUGGIES HARNESS

Outdoors for forty years painted once-carries five tons today

WHEN Mr. Peter Kern, Jr. of Reese, Mich. bought a Studebaker wagon, thirty-two years ago, the wagon had been working for eight years. This means that it has now been in use forty years.

A letter from Mr. Kern says:

"I bought my Studebaker from Henry Daley thirty-two years ago. The wagon has never been housed—always out in the open air and has had but one coat of paint in the forty years.

I have used this wagon to haul sugar beets, four tons at a time, over country roads. The material in the wagon is as hard as a bone.

In 1881 I bought more land, giving me a total of 340 acres, and my old wagon with one other Studebaker I bought fifteen years ago, has done all the hauling.

I will guarantee my old Studebaker to deliver 5 tons today. I am satisfied that the Studebaker is the best farm wagon in the country."

MADE OF THE RIGHT MATERIAL

This letter proves that Studebakers use good paint on their wagons, but the real reason for the long life of Mr. Kern's wagon is the material underneath the paint. Nothing but the best of everything is used in Studebaker wagons.

You can buy today a Studebaker wagon that will last you just as long and give you just as faithful service as the wagons Mr. Kern and others describe.

You may be offered a wagon represented to be "just as good as a Studebaker"—and at a lower price. Don't be fooled. It is the life of a wagon that counts. Studebaker wagons are the cheapest in the end.

Remember Studebakers have been building wagons for over sixty years and they know how to build wagons that will last longest and give the most satisfaction.

The same thing is true of Studebaker Buggies and Harness.

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Studebakers last a lifetime

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SIZE TYPE VIGOR
Our Sales have been unusually good for the past few months, but we still have a good assortment, of Bred Sows, Bred and open Gilts, Young Boars ready for Service, and Fall and Spring Pigs, in Singles, Pairs and Trios, not akin. Write us your wants, all stock guaranteed, and we make our sales Satisfactory.
Prices Reasonable for Quality.
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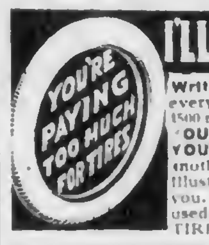

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ESTABLISHED 1880 PUBLISHED WEEKLY

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Philadelphia, Pa., April 18, 1914.

The Country Church

The lack of suitable diversions, amusements or associations under normal conditions in rural communities is credited with driving the younger generation away from the country out into what appears to be a world of larger opportunity and experience. Without placing the responsibility for these conditions, it would seem that the country church has a big opportunity in helping to overcome them to a large degree. The average rural church, closed as it is six days in the week and often open only for the morning service on the seventh is a monument to the coldness and the barrenness of life in its neighborhood; and it is impossible for such a church to radiate the true, helpful, brotherhood spirit or to possess the warm, congenial, social atmosphere which should characterize it. Surely the church is, or should be, the logical social center of the country community. With a little trouble and slight expense the basement or lecture room or even the assembly room may be made a place of warmth, light and social cheer, where miscellaneous or special gatherings may be held several nights a week and where those who are interested may find a meeting place to discuss their individual problems. The country minister has peculiar responsibilities in the matter of helping to banish some of the conditions which cause stagnation in the social life of the farming sections. If he be interested in farming problems, and has an understanding sympathy with the social community life he and his church can be a dynamic force in all the country. Here mothers could come with their sewing and exchange views on household problems. Invitations to the men to congregate and discuss farm and business questions should elicit favorable response. While some might hold up their hands at the mere suggestion of installing equipment for entertainment of the younger people, such things may even be a "means of grace." An occasional lecture by the farm expert or the woman canning expert at the State College would add its quota of interest. Too often can it be said of the rural church that it performs its drowsy spiritual mission in a drowsy way, that its ministers to the sick and buries its dead, but that it never touches the community it serves in any vital way. Like the proverbial closed parlor "its cold walls have never echoed back the laughter and normal gaiety of human life. These walls are so saturated with the story of man's fall and the difficulty of his redemption that they probably would not echo to the carol of real life." While no other man touches rural life at so many angles or so intimately, and no other man could lead and direct community interests more mutually helpfully than the country clergyman, he should not have to bear the whole burden of responsibility in this direction. United effort on the part of minister and people is what makes for growth and progress. Lend a hand.

Country Boulevards

The well-founded opposition to that part of the state highway law regulating the operation and licensing of traction engines raises an important question in construction of country roads. Do we need good roads for farmers in the modern interpretation of good roads, or roads good for the every-day needs of the farmers? The high-priced, smooth-surfaced roads giving the ideal conditions for automobile travel are not suitable to the practical needs of the farmers. The smooth and frequently oiled surfaces of such roads, while offering the best conditions for light driving and auto travel are entirely unsafe and impossible of heavy hauling. In wet weather they become slippery and horses are unable to gain the foothold necessary for pulling heavy loads. These conditions have raised vigorous objections from the farmers who have had to use such roads in sections of New Jersey and Maryland the past winter. In this state the law limiting the weight and regulating equipment on traction engines tends towards driving these necessary machines off the roads entirely. A recent meeting of threshermen and other engine owners at Harrisburg developed vigorous protests against the present law, and these engine owners are likely to be supported by the rank and file of farmers if it is demonstrated that the present law will bar threshing outfits from travel of our so-called improved roads. Farmers want good roads, but they want those roads good for every class of travel and not so highly "improved" as to make them useless to the most important and ever-necessary class of travel—the transportation of farm produce to market. This objection need not halt road work or the building of stone roads, but it will necessitate providing a road surface that will be suitable to all classes of farm travel, or the building of double roadways. There is every reason why the every-day business needs of the farmers' use of roads be taken care of first, which means that the greatest and most immediate need is in the improvement of our earth roads.

Eastern Live Stock

The recent cattle feeders' convention held at State College and fully reported in this issue should provide a strong impetus to the cattle feeding industry in the East. The liberal attendance and the interest manifested in methods of feeding and handling indicate the increasing attention that is being given to this branch of farm work. More and more of our eastern farmers are appreciating the fact that there is a promising future in limited cattle feeding on eastern farms, but they also realize that profits depend upon best methods of treatment. Cattle feeding does not and never will present a wide margin of profit which will permit of careless or indifferent methods. Returns depend upon small savings upon daily cost, and the largest possible return upon the lowest possible cost of maintenance. The purpose of the experiments just concluded was to demonstrate methods in securing such results, and the convention permitted the visitors to study those methods and the results obtained at first hand. This is advancing the greatest service of the experiment station. These institutions are established for the purpose of developing just such information for the use of the farmers of the state in their every-day practice, and they are doing the greatest good when they press home the results of their work in the practical way accomplished by the recent convention. It is understood that these conventions are to be continued each year. Can we not have similar events to bring before the farmers the result of experimental work in sheep and hog breeding and feeding?

MARYLAND LEGISLATIVE RECORD

How Agriculture Fared

On April 7th, the day following the adjournment of the Maryland Legislature, a Baltimore daily published a cartoon labeled "The Harvest Field." It showed a farmer with a big smile standing before a shock of grain sheaves, labeled "Penal Reform," "State Tax Commission," "Home Rule," "Reform in Legislative Procedure" and "Workingman's Compensation." The farmer of the picture was either a city man in disguise or the city editor expected the farmers of the State to rejoice over the passage of bills in which the city man rather than the farmer was interested.

Lime Bill Defeated.—Meanwhile, this same Legislature, at the instance of U. S. Senator, John Smith, had killed the Blandford lime plant bill, which provided two agricultural lime plants for the state, one to be located on the Eastern Shore and the other in Southern Maryland. The experience of Illinois, which uses convict labor to furnish its farmers lime at cost and the recent efforts of Virginia in this direction counted for nothing when it became necessary for the Senator to strengthen his fences in Western Maryland, whose lime manufacturers opposed the Blandford bill, without, however, telling how to get lime. Strange to say, the representatives of the Southern Settlement and Development Organization, which corporation has secured the services of Doctor Cyril Hopkins as its soil expert, made no effort to prevent the killing of the Blandford bill. They were interested only in the passage of Senator Campbell's bill appropriating $20,000 annually for a survey of Maryland soils, under direction of the Maryland Agricultural College. This bill was passed, altho reducing the appropriation to $10,000. The Legislature, it would seem, did not realize that the farmer's trouble is not a lack of knowledge as to what his soil needs (the Co-operative Demonstration Service will tell him that), but rather a lack of ability to get what it needs. Whether this be lime or fertilizer, both cost money.

College Bill.—The bill granting a new charter and an appropriation for the rebuilding of the Maryland Agricultural College was defeated. President Patterson asked $1,000,000 in annual instalments of $250,000 each, with adequate provision for maintenance. This was cut in committee to $350,000 with the understanding that the private stock holder interests be removed from any part in the management of the college. A Baltimore daily describes this as an effort to "republicanize" the college, forgetting that a college has as little right to be "Democratic", as "Republican," or any other brand of politics. Another paper's version of the unfortunate affair is much more in accord with the facts. It said of the final session:

"Earlier in the night the House had taken up the College bill which it had amended by eliminating private stockholder interests, and which the Senate had changed back to its original form on the protest of some of the directors, named in the original measure, but who had been eliminated. The House, refused to concur in the amendments, and a conference committee, failing to induce the Senate to recede, the bill was killed by the House. With it went a loan of $350,000 for new buildings which was contingent on the new charter bill getting thru. The scheme fell thru the stubbornness of some of the directors, who preferred that the College should go without money than to see themselves eliminated as life directors representing an interest that they had agreed to surrender."

Agricultural development in Maryland under leadership of a reorganized and properly equipped agricultural college is thus postponed for at least two years. The college, which receives only its usual meager appropriation for maintenance must try to live on a starvation diet and there is talk of leaving the institution in the hands of the stockholder interests and establishing "an agricultural college that will be such in fact as well as in name." The situation is a deplorable one and every friend of agriculture cannot but regret that the Legislature did not earlier in the session take hold of this matter with a strong hand and adjust it in the interest of the people of the State.

Roads.—The Legislature made an appropriation of $6,600,000 for the continuance of the present policy of road building by the State, without, however, studying the question from the viewpoint of the farmer who is usually much more interested in reaching a railroad or a steamboat landing than in a smooth automobile road connecting two large cities. If the question was studied at all, it was studied from the view point of the city rather than that of the farmer.

Agricultural Appropriations.—Unusually liberal appropriations for various agencies having to do with agriculture were made. It gave $10,000 per annum to the Live Stock Sanitary Board to fight hog cholera, without stating just how this money is to be used. It added $1,000 to the $3,000 appropriation now in the hands of this Board for dairy inspection. It gave the State Veterinarian $15,000 annually for the establishment of a Board of Control and for the indemnifying of farmers for the slaughtering of diseased cattle. It did not, however, ask itself if the work of these two Boards could not be advantageously combined.

It passed a seed inspection bill and gave an increased appropriation to the State Bureau of Immigration, which is now branching out as a State Agricultural Employment Bureau. It also passed a State-wide bill authorizing the County Commissioners to appropriate $1,000 of the county funds to promote the Co-operative Demonstration Service in conjunction with the United States Department of Agriculture. But it did not ask itself if it might not be possible to co-ordinate and correlate all these agencies under direction of a strong State Board of Agriculture. Nor was anything of this kind suggested by the trustees of the Maryland Agricultural College, who were made a State Board of Agriculture in 1908, without any duties whatsoever being prescribed for such a Board.

If the farmer looks at this legislative harvestfield, the smile depicted in the cartoon mentioned will soon come off. If he sits down under some shady tree to scratch his head, he will soon find that the trouble is with his own lack of organization. If he makes up his mind to cure that, he will arrange with somebody to do the chores during the legislative session of 1916, while he goes to Annapolis and crowds the suffragettes, the uplifters, the oystermen and the city politicians out of the State House corridors until he, once and for all, gets a few of these things straightened out to his own satisfaction and the state's profit.—S.

STATE CAPITAL NEWS

Taxation Ignored.—Little is being heard about the subject of equalization of taxation or some means of bringing about an adjustment in the interest of fairness of the valuations of the farm lands of the State. Except for some glittering phrases which might be interpreted more as amiable recognition of the subject than otherwise none of the political parties or candidates have given this topic the attention it merits. It has been pointed out by the State Board of Education in official reports, discussed on the floor of the legislature and time and again mentioned by the State Grange that the values of rural districts are not commensurate with those in the city, the advantage being all with the urban community, which has a thousand lines of support, to one on the farm. It is to be hoped that something will be done to make the taxation laws simple and to raise the load resting on farms.

Substantial Aid Needed.—There are signs that the next legislature will be asked to either repeal the township road bureau act of 1913 or else to quit

keying and make an appropriation ficient to enable the act to be carri- out as contemplated. The whole mat- goes back to the highway or "dirt d" bill of several years ago. This islation was enacted without very ch thought as to what it would cost d agreement made that the state uld pay to townships a bonus for lishing the work tax. When the nships began to collect the road tax cash the solons recognized the tre- ndous blunder made in passing the before they knew what it was go- to cost, but never once has an ap- priation that would meet the obliga- n been made.

Threshermen Here. — Men owning ction eng nes, threshers and other ap- ratus which must travel along the ds left no doubt in the minds of vone here that they meant business their campaign against the law regu- ing licensing of traction engines and regulations established by the State ghway department. The law was con- nned as unfair, notwithstanding some e called attention to the fact that ere was a constant tendency to in- se the weight of engines and that e were being built in excess of 26,- pounds weight and that the buildi g roads in this state had not reached rfection. As for the regulations made y were called arbitrary. There is bably something to be said on both es.

State Aid Roads.—After weeks of dying of plans the State Highway de- rtment has asked for bids for the struction of eight or ten sections of hway under the state aid plan. This the first of a lot of about thirty such tions planned if the money holds out. e fund for building highways under state aid plan of half the cost be- borne by the state and half by the nty and borough or township, as the e may be, is about the only one that State Highway department has to end upon.

Hay Rates High.—So many com- nts about charges on hay rates have e before the Public Service Com- ssion that considerable attention is ng given to such rates in the tariffs d with the commissioners under the of last year. A study is to be made ascertain whether there is any dif- rence worth mentioning between lo- ities, and a report will be made to e board. Similar action is to be taken regard to fertilizer about which there s been complaint from time to time.

Farmyard Drainage.—The State De- rtment of Health plans to issue a lletin on the subject of farm yard inage. It is believed that many farm- s are not only polluting streams, but e losing valuable fertilizer because failure to construct modern manure s. Letters sent to the Department of alth from places where farmers built crete vaults for their manure indi- te that valuable results have been ob- ned and that water which formerly ined away has been used on gardens th much satisfaction. The farm ad- ers who are now engaged in work ruout the State are giving attention questions on improvement of drain- e.

Bulletins Destroyed.—The fire which stroyed the plant of the printers en- ged in completing various state con- cts unfinished on July 1, ruined cop- s of the bulletin on beef production ued by the department of agriculture is spring. Only about one-third of the lletins had been put out and the rest re awaiting binding. Owing to the mand for bulletins of this department is likely that they will be republished. e reports of the Chestnut Tree Blight d Water Supply Commissions were o destroyed in the fire, but the copy s preserved. The copy for the study the soils of the state by counties is in e hands of another printer and will be ued later in the year.—Hamilton, rrisburg, April 13.

NEW JERSEY FARM NEWS

State College News.—Professor F. C. inkler of the department of animal sbandry and principal of the short urses in agriculture, has been engaged reorganize the city farm of Paterson. Hog raising will be one of the most im- rtant industries. Plans are being de by the faculty of the extension partment under the direction of Prof. lva Agee, for an extended trip dur- g the spring vacation by agricultural udents, the intention being to visit e Southern experiment stations and include the members of the junior ass in the party. The new $100,000 ricultural building practically is com- eted and the offices of the experiment tion will be removed there. A demonstration in apple-judging was given by a team picked from the members of the junior class of the agricultural courses. About twenty members of the senior agricultural class in charge of Prof. A. C. Stillwell, made a trip to High Bridge to study methods of pruning and spraying fruit trees. The use of an orchard there was obtained by the faculty. The students also were given an opportunity to compare recent scientific methods with older ones.

State Farmers at Frisco Exposition.—At the last meeting of the State chamber of commerce, the committee on agriculture reported steps taken to bring together representatives of each county for united effort toward making an exhibition of agricultural products at the Panama-Pacific Exposition in 1915. The State board of agriculture the State grange and the State horticultural society have united to ask for an allowance, adequate to insure a creditable display. As a great State daily puts it: "Every State in the Union will send its visitors to the Panama-Pacific Exposition, and New Jersey can, if it will, show them some mighty fine reasons for settling right here."

The State's Timber Supply.—New Jersey has still a timbered area of about 2,000,000 acres (twice the cultivated land area,) on which the timber is worth about $8,500,000 on the stump. It is mainly valuable for cord wood. Strong efforts are being made by the State Forester and State Fire Marshal to conserve all this timber. Why should not such timber land be cleared and cultivated? The soil of the forested area of North Jersey will grow apples and truck crops to perfection, while that of South Jersey's famous "Pine Barrens" will grow the finest asparagus, berries and peaches to be grown anywhere.

Heavy Snows May Help Crops.—The heavy snows of the last two months which did considerable damage to fruit trees may prove a blessing in disguise. Since the disappearance of the snow from the fields, soil conditions have been found to be ideal and crops have a better start this spring than for several years due largely no doubt to the storing up of moisture for future use of fruit and truck crops.

Orchard Demonstration Work.—The New Jersey State experiment station and the Mercer county farm bureau have arranged to make a demonstration orchard of the hill orchard of J. C. Errickson at Pennington. Mr. Errickson will develop the orchard as a commercial proposition with the assistance of the station and bureau. Prof. A. J. Farley will represent the station in outlining the work. The orchard will be pruned, sprayed, cultivated and fertilized according to the best known methods with the purpose of demonstrating that such methods are commercially profitable. Public demonstrations of the various processes will be held from time to time. Pruning demonstrations have also been given in various orchards in Sussex county.

Other New Laws.—Among new laws which have been added to the statute books of the State are these: Senate 124, permitting boroughs to improve roads and to be reimbursed for the cost thereof by the county and the State, but necessitating the approval of the State road commissioner; House 271, repealing the act of 1909 exempting county lands from municipal tax up to fifty acres; House 545, providing that municipalities may widen or straighten county roads within their limits; Senate 51, fixing a standard measure for cranberry barrels; Senate 82, permitting the payment of taxes in instalments. Assemblyman Nutting's canning bill, requiring canners of food to place on their labels the date the food was packed, was defeated. As a special committee, Senators Ackley, Gaunt and Smick have reported some amendments to Senate Bill 252 with regard to school study courses in rural districts, which provide absolute home rule to the districts in this regard.

State Closes Dairies.—Four dairies which distributed milk in Atlantic City and South Amboy were forbidden to continue business last month by the inspectors of the creamery and dairy division of the State board of health. The license of one ice cream establishment in Salem county was revoked for alleged carelessness in handling milk. All milk dealers who have apparatus for pasteurizing milk have been notified of the adoption of a rule by the board requiring the equipment of all machines with devices for holding milk for 20 minutes at a temperature of 145 degrees Fahrenheit.

Concrete Roads Economical.—Future new roads in New Jersey may be built of concrete and not of macadam, as formerly. Concrete roads, costing somewhat more than the macadam roads, have been built in the West and maintained for four years at a cost of less than $5 per mile per year. The surface of these roads, it is said, is in as good condition as when first thrown open to traffic. Thus, from the investment standpoint, solid roadbeds on main traveled highways would be much cheaper than macadam. Official reports state that in New Jersey the maintenance of macadam roads has been in excess of $900 per mile per year. This represents the investment on $18,000 at five percent. Assuming the first cost of a macadam road to be $8,000 a mile, an investment of $26,000 per mile is really represented. Under average conditions a good concrete road can be built for $12,000, and, as stated, actual experience has shown that up-keep costs are practically negligible.—D. T. Hendrickson.

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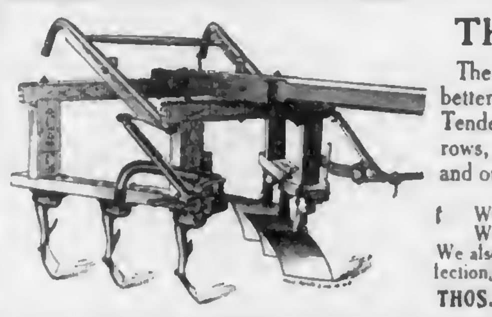

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Poultry

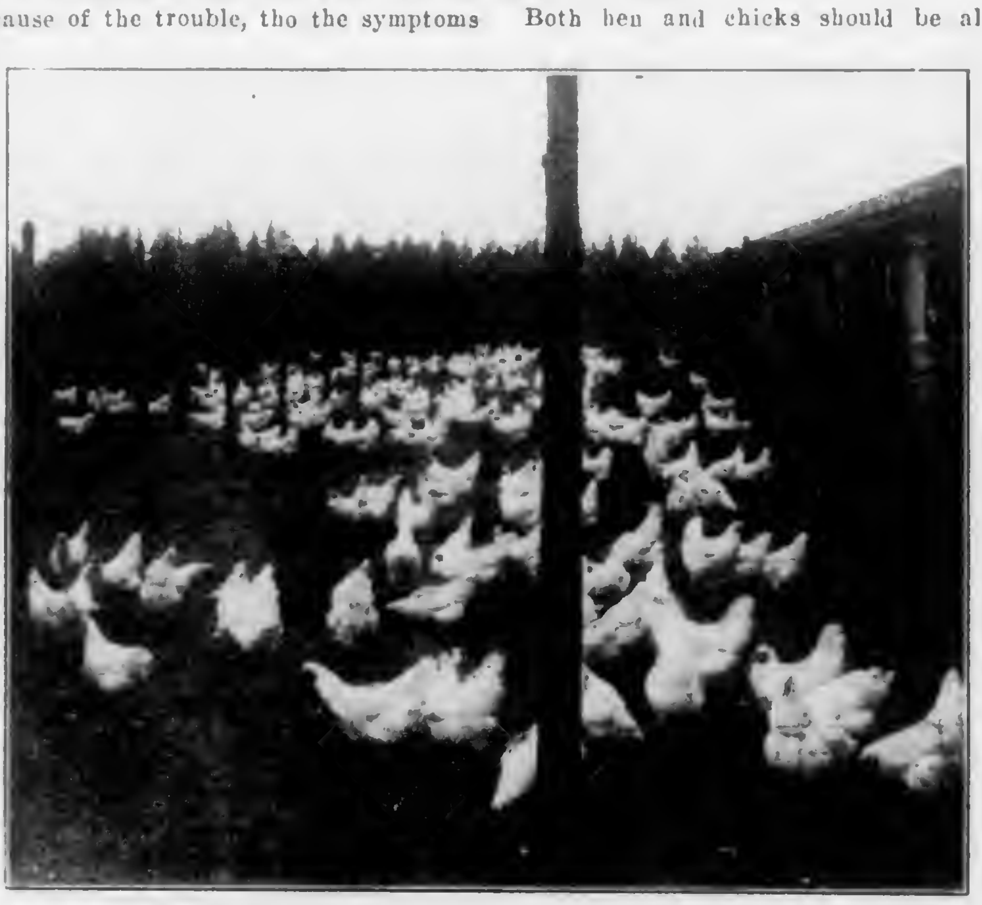
POULTRY QUERIES

Answered By J. T. Campbell.

I am writing to ask if you can tell me the cause for losing one of my hens. She had been a very poor worker, standing about most of the time, which I thought might come from overfeeding. Otherwise she appeared to be in good condition. Two days before she died she apparently lost her appetite completely, altho I had cut down considerably on the feed. This continued until the last day, when she did not come from the roost until late in the morning, huddling in one corner of the house and dying in the evening. On cutting her open I found her quite fat and the body full of water, greenish yellow and very offensive. She had a batch of eggs and apparently would have laid within a week. A number of other hens show the same symptoms.—A. K., Pikesville, Md.

It would seem that the liver was the cause of the trouble, tho the symptoms are not definite enough to enable me to more than guess at the matter. Such troubles are generally produced by improper nourishment, lack of green food, etc. It is well always to keep in mind the fact that the natural functions of the animal organism can be maintained at their best only when the animal has an opportunity to eat the foods which supply the calls of the animal system fully. Many persons do not provide for this in poultry feeding; hence the fowl is compelled to eat a large amount of something she does not need in order to get a bit of some element which the system craves. If these conditions are prolonged for a time it must result in an abnormal condition in the system and finally death. This is more apt to be the case where birds are closely confined than on the farm where free range enables the birds to satisfy their desires.

Feed the birds plenty of good, clean grain. Feed it whole. Provide a box of dry beef scrap and wheat bran for them, using equal parts of bran and dried beef scrap. Supply oystershell and crushed limestone at all times and do not forget the green stuff in the way of grass or mangels or cabbage. Go a bit slow on sprouted oats. Feed a liberal amount of charred corn once a week.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BROILERS ON THE FARM

The early chick is the most profitable, yet there is profit in the late chick provided it is not too late.

In a section where there is a good demand for light-weight roasters and broilers of from two to two and a half pounds, a splendid opportunity is furnished those who wish to rear and market chicks without being obliged to house them. Hatched in May or June, they should easily weigh two or two and one-half pounds before Oct. 1. If especially well fed, they should reach that weight still earlier. This is the most favorable time to hatch and raise chickens, as the parent stock has been out of doors long enough to acquire splendid health and remarkable vigor. Eggs, if sensibly set, should hatch almost perfectly and the chicks should live and thrive.

The equipment required is very small—a good sized box or barrel, covered with waterproof paper, set in a dry sheltered place, may be used both to set the hen in and to house the brood, tho the barrel is rather unsuitable for the brood after the chicks are weaned, especially if there are many of them.

Both hen and chicks should be allowed free range after the chicks are a few days old, to pick up a large share of their living, but in addition it is a good plan to feed them at night, and to give them all they can eat, as they will grow faster and will either be marketable at an earlier age or weigh more, and consequently bring more, at a given time. Chickens of this weight, will not, it is true, bring a fortune, but it must be remembered that they cost very little to rear. The fact that the earlier they are marketed, the better the price, should not be lost sight of. For this reason, it pays to feed them a little where there is not an opportunity to pick up abundance of food.—A. C. Smith.

HATCH EARLY

Perhaps there is no branch of farming that develops so many details as poultry work. One essential of poultry keeping which is being overlooked by the average farmer is that of getting the chicks hatched early. An immature pullet will not lay eggs. It can't. Therefore, if eggs are desired in the late fall and winter it is necessary to get the chicks hatched out during the months of March and April. Then they will be matured if fed properly by November and should begin laying and keep at it all winter.—V. R. N.

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Grange

RESPECT FOR THE COURTS

When the founders of this government divided it into three separate branches, legislative executive and judicial, it was intended that these three should be distinct and untrammelled in their action. But as time has passed we find that the function of the legislative branch has been transgressed upon by both the executive and judicial.

The administration has gotten to be the greatest deciding force in the legislative work of the Federal, and, indeed of many, of the state governments. This idea was largely developed by Mr. Roosevelt. Mr. Taft tried to continue it, but lacked the strong personality necessary to maintain the colusion of forces. Under the strong personalities of Mr. Wilson and Mr. Bryan it is being developed again in greater degree than ever. Yet it is absolutely wrong in principle and pernicious in practice. In the hands of men like Roosevelt and Wilson it is especially dangerous, because of their superb ability to handle and control men. While it is true that the constitution gives the President the right to take an interest in the promotion of legislation, it certainly was not intended that the legislative branch of the government should become the tool of that mixture of personality and patronage called the administration.

It seems to be taken for granted that the President is more responsible to the people than the congressmen and that, therefore, he is justified in wielding every kind of controlling influence to accomplish in legislation what he thinks best. In the hands of a man like Mr. Wilson this might work out to the good of the body politic. He seems to be a man of broad vision and honest purpose, but we are not in a position (unless we have ceased to be a democracy) to accept paternalism even from a good man.

Senators and representatives do well to fight such a policy tooth and nail. The congress was given the making of our laws, encouraged on the one hand by the messages and personal advice of the President, and restrained on the other hand by the veto power vested in the President. Any influence exerted upon congress such as the trading of federal patronage for support of certain bills is a usurpation of the legislative function which can only result in breaking down more and more the purity of our democracy. There is less excuse for this interference today than in the past, because the U. S. Senate, which has been very irresponsive to the will of the people, is now being elected directly by the people and will be more anxious to do what they were intended to do.

However the executive branch of the government has not been alone to blame in not keeping to its own business. The Judicial branch has been even more to blame. It has usurped a part of the legislative and a part of the executive branches of government and has tried to make up for this usurpation by the assumption of a dignity entirely out of place in a democratic form of government. The wearing of a particular kind of gown and the austere and haughty dignity of carriage and manner are relics of the dark ages which our courts would do well to dispense with.

Respect and reverence are things not to be asked for but must come as a recognition of desert. Men today are pleading in public speeches for respect for the courts. We are admonished not to question the integrity of courts, and other such like expressions. It is no use to make such appeals. The courts have made themselves a laughing stock to those who understand English, but who cannot fathom these word contortions and hair-splitting distinctions by which the evident intention of the language as well as the known purpose of the legislators who framed the language is made to carry a meaning in many cases exactly opposite to that which was known to be intended.

Legal interpretation has gone down from what the law means to what it might possibly be made to mean. The function of the judiciary in our form of government was to be a place where an official interpretation of the law would be made whenever any difference of opinion arose as to its meaning. But instead, we find the word "unconstitutional" is one of the biggest hindrances in the workings of our legislative branches of government. A usurpation to start with and an abuse in which the paucity of ideas is hidden in the fecundity of expression to such an extent that the very constitution itself instead of being upheld by the courts is the football of the courts for the benefit of the special interests.

The way for the courts to regain respect is to compell it by doing what they ought to do. They can give the right meaning of the law as the official one just as easily as a technical one. They can uphold the constitution as easily as to make it contradict itself. They can make law simple and easy of construction more easily than they can make it difficult and uncertain; and when they do they will not need the "ermine" to bring respect and unless they do these things all the appeals that can be made by word or costume cannot arouse those deeper feelings of the human heart which we call reverence and respect. People do not soon forget such actions as the reversal of the decision a few years ago on the income tax and the one reading into the law controlling trusts the word "reasonable." But the courts will have to learn that deeds count, not professions.—John A. McSparran.

GOOD ROADS FOR FARMERS OR ROADS GOOD FOR FARMERS

It is about time those benevolent individuals who spend so much time and energy in demanding "good roads for farmers" should change their cry to "roads good for farmers." The good roads that modern engineers are making are not good for farmers at all and, in fact, are of but little use to them. Even where the farmer has not been practically crowded off the roads by automobiles, he finds the surface of the oiled and polished macadam so slippery that he has to drive in the gutter and that at the risk of the lives and limbs of his animals and himself.

Time and again it has been demonstrated that a good macadam road can be constructed for about $4,500 a mile, where excessive grading is not required. The modern roadway is costing about $12,000 a mile with a far greater cost for up-keep than the old-time road, which, when properly cared for, was a road good enough for anybody. The rolling, sprinkling, sanding, oiling and polishing of the surface to make it acceptable to automobilists makes a most expensive highway and one that is of but little use to the people who have to pay the bulk of the bill for its construction and maintenance.

The farmer is encouraged to shout and vote for good roads. He is told that they will enable him to haul bigger loads to market and will make his land more valuable. The latter statement he finds to be true—for taxing purposes. But when he goes to market he finds the new road so smooth and slippery that he can haul no load over it, for his horses can scarcely get a toe-hold to pull an empty wagon, and he has to take some roundabout, old-time road after all.

The automobile is an enjoyable luxury —when it does not commit manslaughter—but the fact remains that fully 90 percent of its use in country districts is still for purposes of luxury solely. Take your position on any of our suburban roads on a nice afternoon and form your own estimate of what proportion of the number of machines that pass you are going on any serious purpose of business or on trips which could have been made less expensively by other means of locomotion.

But people have a right to spend their own money as they may choose. The main objection that the farmer has to the present manner of improving roads is that other people are spending his money in an extravagant way — they are making him pay for a road which is largely for purposes of sport and not for the real industrial development of the country. As a rule, the driver of the automobile doesn't want to go anywhere in particular, so the farmer should not be blamed if he suggests that speedways be built for them. Just let them have cicular tracks where they can keep on going around and around. Build the country roads in the manner of the old-time 'pikes, finished with stones the size of a hickory nut. The automobilists will find that they can use them very well, and if the surface is not so smooth maybe they will be restrained from dangerous bursts of speed, thus making the roads safer for themselves and for other travelers. Good, hard roads are very desirable, and we can not have too much of them, but the veneered surface is not an unmixed blessing by any means.

Since the world began the farmer has been its mainstay, and he always will be. And since the world began a good many people who make their living off him in one way or another have been trying to sell him gold bricks, with many variations of the game. It looks a good deal as if the modern good road, so far as he is concerned, is another one of those misleading, glittering parallelopipedons.—Union News, Towson, Md.

JUST THE PAPER HE WANTS

Enclosed find a list of subscribers to Pennsylvania Farmer for one year from January 1, 1914 to January 1, 1915. Pennsylvania Farmer is just the paper I have been looking for. About a year ago I saw mention of it in the Grange News and wrote you for a sample copy and have been a subscriber since and the enclosed list of subscribers will show you how I appreciate it.—J. H. Keilman, Barnesville, Pa.

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FELS-NAPTHA

Household

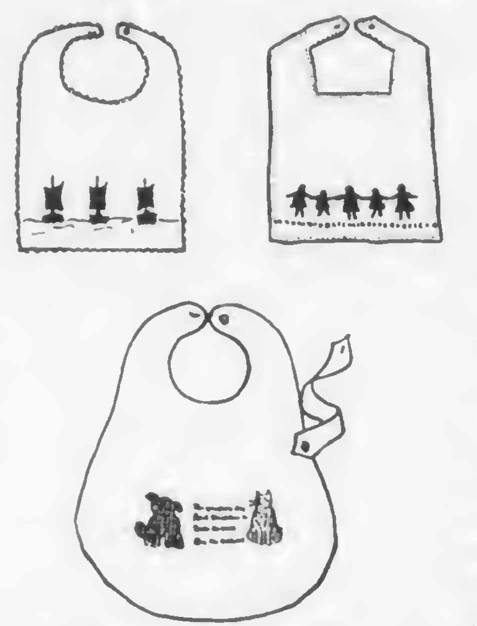
SOME THINGS FOR THE BABY
What To Give The New Baby

Perhaps it would be more to the point to say, what not to give the new baby, for probably nine young mothers out of ten receive a set of gifts whose prettiness is equalled only by their uselessness. For example, one baby was presented with two pairs of narrow-soled, pointed-toed boots, warranted to lay the foundation of corns and bunions at the outset; an expensive cradle pillow, heavily perfumed with sachet powder which puffed out whenever it was shaken, and covered with a hand-made slip all over rough little pink rosebuds that faded the first time it was washed; a pale blue cashmere jacket lined with silk, ruined the first time of wearing by an overflow of milk; a worsted jacket crocheted in open stitches thru which the infant pushed its fingers and was continually entangled like a fly in a cobweb; a bead necklace, the string of which broke immediately, scattering the beads and terrifying the mother with the fear that some had been swallowed; and so on thru a long list.

Anything intended for baby's intimate use should be washable, if its nature anywise permits. A cradle pillow is of no use, however smooth and free from dust of any kind, because a young baby's head slips down from even the smallest pillow. A plain cushion, about 16 inches square, for the carriage, with two or more slips to fit, so that there may be enough for a change, all trimmed simply with a frill of embroidery around the edge, is a really desirable gift, fitting into a place which is waiting for it. Instead of silk and cashmere jackets, two little flat sacques of the kind that are tied in shape under the arm with a ribbon, made of white or pale-tinted Scotch flannel, bound at the edge with taffeta and possibly feather-stitched to match, would be much better, and much cheaper, and they can be laundered and made as good as new when soiled. As for necklaces, any kind is dangerous for a baby, for if the cord or chain is too strong to be broken by a tug of the little hand, it may become twisted about the neck and strangle the child.

Something that fills a daily want and fills it well, that saves time and trouble, something the preservation of which is not a constant care, is the sort of gift which makes a busy woman truly grateful. One of the most continuously useful things a baby can have is a pair of blankets made of ordinary white flannel, about 40 inches square, bound around the edges with white, pink or blue taffeta binding. These are not bulky or heavy, are easily washed, and can be wrapped about the child or spread over it without catching the little fingers and toes as does a knitted or crocheted shawl. Another gift whose usefulness bears no relation to its cost is a set of homemade wash-cloths. Three yards of the finest grade of cheesecloth, costing 10 cents a yard, will make twelve, ½-yard squares. The edges are folded in the narrowest possible flat hem, and are hand run with fine stitches of No. 100 cotton, so that they will be soft. When all are done they should be boiled to sterilize them, ironed and folded, and tied up in tissue paper with narrow ribbon to make a dainty parcel. Most trained nurses prefer to use a cloth instead of a sponge for the baby, as a sponge cannot be boiled. Another thing nurses and mothers like for babies is woolen stockings instead of knit or crocheted bootees, for there is no openwork about the stockings to catch the baby's toes, and the stockings come up well above the knee and can be fastened to the underwear with safety pins.

Plain, everyday dresses are always acceptable, as a baby needs frequent changes. A petticoat with waist as well as skirt made of flannel, with armholes, and fastening with buttons and buttonholes instead of safety-pins, is sure to be welcome. Two pique carriage robes, with a frill of embroidery around the edge to match the pillow-slips, can be used summer or winter, and insure a clean, fresh aspect for the baby's turnout. In cold weather a padded quilt is tucked around the baby under the robe, and is really warmer than the fluffy knit afghan so often seen, because the latter is easily penetrated by wind while the quilt is impervious.


BABY'S FEEDERS OR BIBS.

Thumbless mittens are far more easily put on baby's fist than those with thumbs, and the baby does not know the difference while the mother does. Ease of adjustment counts for a great deal in a baby's wardrobe. The armholes of a baby's long coat ought to be made much larger in proportion than those of a grown person, as othewise it is a work of time and tears to get on the sleeves. However temptingly pretty the articles in the baby-shops may be, most of them are made to sell rather than to use. Therefore choose clothes not too good to be worn, toys without buttons or trinkets to be torn off and put in the mouth, accessories without loops or ribbon to catch. A safety strap for the carriage, a teething-ring, a feeding spoon, a box to hold the baby's toys, a crib quilt, a large Turkish towel to wrap the child in during its bath, are all gifts that the giver may be sure will be welcome, because they are really helpful.

"Feeders"—They Used To Be Bibs

One unfortunate person asked a saleswoman where she could find children's bibs and was politely but firmly told that in this particular and exclusive shop they were called "feeders". Somehow this new name does not seem to fill all the duties of a bib, but the feeders themselves surely do. They are cut by much the same pattern as an ordinary bib, generous in size and straight across the bottom.

The old nursery rhyme "I saw three ships come sailing by" was attractively illustrated on one. The three ships with large square sails and rather pointed "fore and aft", were of blue cross-stitch. This bib was button-holed around the edge in blue. What looked like a row of paper dolls danced across another bib. Everyone has made these strings of dolls holding hands out of a sheet of paper that has been folded a great many times. The dolls on the bib were cross-stitched, first a blue doll with a red belt, then a red doll with a blue belt; they were not really handsome, but it is the obvious thing that appeals to children.

Here is shown an old-fashioned bib pattern that is almost a pinafore in size, cut in one piece to go around the neck and with a strap under the arms across the back, which buttons it tightly in place. A bib of this pattern in heavy linen, bound around the edge with braid, was dedicated to Eugene Field's "Gingham Dog and Calico Cat." The animals were about 4 inches high; the dog, cut out of crossbar blue and white gingham, with button eyes and a red embroidered mouth, was gazing at the cat, cut out of blue and white figured calico, which sat opposite. They were applied to the linen with coarse buttonhole stitches, and between them this verse was written in cross-stitch,

"The gingham dog and the calico cat
Side by side on the table sat."

—Marie Royle.

CARAMEL RICE PUDDING

For the caramel: Four ounces of loaf sugar, a quarter of a pint of water. For the pudding: Three ounces of rice, one pint of milk, one tablespoonful of powdered sugar, two eggs, vanilla essence.

Boil the sugar and water till a light-brown color appears, then pour the resulting mixture into a plain mould till every part of the latter is coated with caramel. Stew the rice, add the eggs, sugar and flavoring. Pour this combination into the mould, cover with grease paper; steam for almost an hour. Serve either hot or cold.—L. I.

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MR. PRATT

By JOSEPH C. LINCOLN

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CHAPTER I.

The Masters

I heard about the pair first from Emeline Eldredge, “Emmie T.” we always call her. She was first mate to the cook at the Old Home House that summer. She come down to the landing one morning afore breakfast and hove alongside of where I was setting in the stern of my sloop, the Dora Bassett, untangling fish lines. She had a tin pail in her fist, indicating that her sailing orders was to go after milk. But she saw me and run down in ballast to swap yarns.

“My sakes! Mr. Pratt,” says she: “have you heard about Nate Scudder?”

“Yes,” I says. “Ever since I come to Wellmouth.”

“I mean about what him and his wife has just done,” says she. “It's the queerest thing. You'll never guess it in the world.”

“Ain't been giving his money to the poor, has he?” says I, for, generally speaking, it takes a strong man and a cold chisel to separate Nate Scudder from a cent.

“Oh! ain't you the funniest thing.” she squeals. “No indeed! He's let his house to some city folks, and——”

“Ain't that the cook calling you?” I asks. I'm a homeopath when it comes to Emmie T.; I like to take her in small doses—she agrees with me better that way.

It was the cook, and Emeline kited off after the milk, only stopping long enough to yell back: “Folks say they're dreadful rich and stylish. I'll tell you next time I see you.”

Well, I cal'lated she wouldn't—not if I saw her first—and didn't pay no more attention to the yarn, except to think that June was pretty early for city folks to be renting houses. There was only three or four boarders at the Old Home so far, and I was to take a couple of 'em over to Trumet in the sloop that very day.

But, while we was on the way over, one of the couple—sort of a high-toned edition of Emmie T. she was—she turns to her messmate, another pullet from the same coop, and says she, “Oh say!” she says. “Have you heard about the two young fellers from New York who've rented that Scudder house on the—on the—what do they call it? Oh, yes! the Neck road. I heard Nettie Brown say they were too dear for anything. Let's drive past there tomorrow: shall we?”

So there it was again, and I begun to wonder what sort of critters Nate had hooked. I judged that they must be a kind of goldfish or he wouldn't have baited for 'em. Nate ain't the man to be satisfied with a mess of sculpins.

I landed the boarders at Trumet and they went up to the village to do some shopping. Then I headed across the harbor to shake hands with the Trumet light keeper, who is a friend of mine. His wife told me he'd gone over to town, too, so I come about and run back to the landing again. And I'm blessed if there wa'n't Nate Scudder himself, setting on a mackerel keg at the end of the wharf and looking worried.

I hadn't hoisted the jib on the way down, and now I let the mainsail drop and went forward.

“Hello, Nate!” I hailed, as the Dora Bassett slid up to the wharf.

He kind of jumped, and looked at me as if he'd just woke up.

“Hello, Sol!” he says, sort of mournful. Then he turned his eyes toward the bay again and appeared to be starting in on another nap.

“Hear you got some boarders over to your home,” I says, heaving him a line as hint for him to come out of his trance and make me fast.

“Yes,” says he, paying no attention to the line.

“Come early in the season, ain't they?” says I, grabbing hold of one of the wharf spiles and bringing my boat alongside easy as I could.

“Ya-as,” says he, again. Then he fetched a long breath and opened his mouth as if he was going to go on. But he didn't; all that come out of the mouth afore it shut up was another “Yes.”

I made the Dora Bassett fast myself and climbed on to the wharf.

“Are they cal'lating to stay long?” I asks. He'd got me interested. Seemed to have the “yes” disease bad.

“Hey?” says he. “Oh—er—yes.”

I was a little mite provoked. Not that I was hankering to have Nate Scudder heave his arms around my neck and tell me he loved me, but I didn't know any reason why my pumps should suck dry every time I tried 'em.

“Humph.” I grunted, starting to walk off. “Well, be careful of yourself; look out it don't develop into nothing worse.”

“What do you mean?” he sings out, seeming to be waked up for good, at last.

“Oh,” says I; “I judged by the way you kept your mouth shut that you had sore throat and was afraid of getting cold. Good day.”

Would you believe it, he got up off that mackerel keg and chased after me.

“Hold on, Sol!” he says, kind of pleading. “Don't be in such a hurry. I wanted to talk to you.”

I had to laugh; couldn't help it. “Yes,” says I, “I kind of suspicioned that you did, from your chatty remarks. If you'd said ‘yes’ nine or ten times more I'd have been sure of it.”

“Well, I did,” he says. “I wanted to ask you—I thought I'd see what you thought—you see——”

Here he kind of faded away again, and stood still and wiped his forehead.

“Look here, Nate Scudder,” I says, “for a man that wants to talk you make the poorest fist at it of anybody ever I see. Why don't you try singing or making signs? I wouldn't wonder if you got ahead faster.”

He grinned, a feeble sort of lopsided grin and tried another tack.

“You was speaking of them boarders of mine,” he says.

“Yes; I was,” I says.

“They come day afore yesterday—early,” says he.

“Um-hum. So I heard,” I says.

He fidgeted a minute or so more. Then he took me by the arm and led me back to the keg.

“Sol,” he says, “set down. I want to ask you something. By gum! I got to ask somebody. I'm—I'm worried.”

“Yes?” I said, giving him a little of his own medicine.

“Yes. Them boarders—they worry me. Me and Huldy set up till nigh eleven o'clock last night talking about 'em. She thinks maybe they stole the money, and I don't know but they're crazy, run away from an asylum or something. You've seen more city folks than I have, being around the hotel so. See what you think.

“'Twas this way,” he went on; “I got a letter from the feller in New York that I sell cranberries to. He said a couple of friends of his wanted to come to a place in the country where 'twas quiet. Did I know of such a place round here? Well, course I wrote back that 'twas nice and quiet right at our house. There wa'n't no lie in that, was there, Sol?”

“No,” I says. “I should say 'twouldn't be shaving the truth too close if you'd said there was more quietness than anything else down on the Neck road.”

“Well,” he goes on, not noticing the sarcasm, “I wrote and never got a word back. Me and Huldy had given up hearing. And then, yesterday morning, they come—both of 'em. Nice lookin' young fellers as ever you see, they are; dressed just like the chaps in the clothes advertisements in the back of the magazines. The biggest one—they're both half as tall as that mast, seems so—he took up his hat and says, kind of lazy and grand, like a steamboat capt'n:

“‘Mr. Scudder?’ he says.

“‘That's my name,’ says I. I was kind of suspicious; there's been so many sewing-machine agents and such round town this spring. And yet I'd ought to have known he wa'n't no sewing-machine agent.

“‘Ah!’ he says. ‘You've been expecting us then. Has the luggage come?’

“What in time did I know about his ‘luggage,’ as he called it?

“‘No’ says I. ‘'Tain't.’

“‘Oh, well, never mind’ he says, just as if a ton or two of baggage didn't count anyway. ‘Can you give us two sleeping rooms, two baths, a setting room, and a room for my man?’

“‘Two baths?’ says I. ‘Can't you take a bath by yourself? You seem to be having lots of funny jokes with me. Would you mind saying what your name is and what you want?’

“He looked me over sort of odd. ‘Beg pardon,’ he said. ‘I thought you were expecting us. Here's my card.’

“I looked at it, and there was the name ‘Edward Van Brunt,’ printed on it. Then I begun to get my bearings, as you might say.

“‘Oh!’ I says. ‘I see.’

“‘So glad, I'm sure,’ he says. ‘Now can you give us the sleeping rooms, the baths, and the room for my man?’

“‘Humph!’ says I, lookin' back at the house behind me; ‘if me and Huldy bunked in the hen-house and the chore boy in the cellar, maybe we could accommodate you, that is, all but the baths. You'd have to take turns with the washtub for them,’ I says.

“He laughed. He was so everlasting cool about things that it sort of riled me up.

“‘Perhaps you'd like to hire the whole shebang?’ says I, sarcastic, pointing to the house.

“‘He looked at it. It looked sort of cheerful, with the syringa over the door and the morning-glories hiding where the whitewash was off.

“‘Good idea!’ he says. ‘I would.’

“Well, that was too many for me! I went into the house and fetched out Huldy Ann—she's my wife. There ain't many women in this town can beat her when it comes to managing and business, if I do say it.

“‘How long would you want the house for?’ says Huldy, when I told her what was going on.

“‘A month,’ says Van Brunt, turning to the other city feller. ‘Hey Martin?’ T'other chap nodded

“‘Thinks I, ‘I'll scare you, my fine feller.’ And so I says, ‘A month! Well, I don't know. Maybe, to accommodate, I might let you have it for two hundred.’ I sort of edged off then, thinking sure he'd be mad; but he wa'n't—not him.

“‘Two hundred it is,’ he says, and fished out a little blank book and one of them pocket pens.

“‘Name's Scudder?’ he asks.

“‘Yes,’ says I. ‘Nathan Scudder. One T in Nathan.’

“And I don't know as you'll believe it, Sol,” says Nate, finishing up, “but that feller made out a check for two hundred and passed it over to me like 'twas a postage stamp. What do you think of that?”

I didn't know what to think of it. On general principles I'd say that a man who wanted to board with Nate and Huldy Ann Scudder was crazy anyhow; but of course these fellers didn't know.

“It beats me, Nate,” I says. “What do you think?”

“Blessed if I know!” says Scudder, with another of them long breaths. “All I'm sure of is that they're up home, with the parlor blinds open and the carpet fading, and me and Huldy's living in the barn. She's doing the cookin' for 'em till this ‘man’ of theirs comes. Land knows what kind of a man he is, too. And that check was on a New York bank, and I've just been up to Trumet here with it and the cashier says 'twill be a week afore I know whether it's good or not. And I can't make out whether them two are thieves, or lunatics, or what. And Huldy can't neither. I never was so worried in my life.”

I kind of chuckled down inside. The idea of anybody's skinning Nate Scudder was the nighest to the biter's being bit of anything I ever come across. And just then I see my two passengers coming.

“Well, cheer up, Nate,” I says. “Maybe you'll get the reward, whether it's lunatics or thieves. Only you want to look out and not be took up as an accomplice.”

He fairly shriveled up when I said that, and I laughed to myself all the way out of Trumet harbor. One thing I was sure of: them two New Yorkers must be queer birds and I wanted to see 'em.

And the very next afternoon I did see 'em. They come down the Old Home pier together, walking as if they didn't care a whole continental whether they ever got anywheres or not. One of 'em, the smallest one—he wa'n't more'n six foot one and a ha'f—looked sort of sick, to me. He had a white face, and that kind of tired, don't-care look in his eye; and the bigger one sort of 'tended to things for him.

“Good morning,” says the big one—the Van Brunt one, I judged—cheerful enough. T'other chap said, “Good morning,” too.

“Morning,” says I.

“Can you take us out sailing?”

“Why—er—I guess so,” I says. “I don't know why I can't, if you feel like going. Course———”

I hadn't finished what I was going to say afore they was in the boat. Now, generally speaking, there's some bargaining to be done afore you take folks out for a three-dollar sail. Your naturally expect it, you know—not so much from boarders as from towners, but still, some. But not for these two—no, sir! It was this powerful suddenness of theirs that hit me betwixt wind and water, same as it had Nate. Made me feel sort of like I'd missed the train. Stirred up my suspicions again, too.

'Twas a nice day; one of them clear blue and green days that you get early

June. The water wa'n't ruggol, t just choppy enough to be pretty, d the breeze was about no'theast, vin' us a fair run down the bay.

'This is grand!” says the big fel- w, as the Dora Bassott begun to feel r oats and lay down to her work.

'Caesar! Van,” said the other one; why do you bring me down to earth e that? Grand! Bleecker next!” hollered out this last part in a kind screechy sing-song. Then they both ghed.

looked at 'em. There wa'n't no- ng to laugh at, so far as I could see, the “Bleecker” business didn't pear to have no sense in it, either. ey made two or three other speeches t sounded just as foolish. Thinks I, wonder if Scudder's right?” They n't look like lunatics, but you can't ays tell. Old man Ebenezer Doane nt to church of a Sunday morning t as sensible acting as a Second venter could be; but when he got me he fired the bean-pot at his wife, sed his children out doors with a m hoe, and they found him settin' raddle of the hen-house singing

A MORNING CALL FROM THE MINISTER.

eulah Land” to the chickens. ese fellers might be harmless loons t had been farmed out, as you might , by the asylum folks. There was t “man” that Nate said was com- . He might be their keeper.

'I understand you've got a friend ng,” says I, by way of ground t.

'Friend?” says the big one. riend? I don't understand.”

'Scudder said you had another man ing to his house,” says I.

He smiled. “Oh, I see.” Then he iled again, a queer lazy kind of a ile, like as if he was amused at him- f or his thoughts.

'I don't know that I should call a friend. Mr.—er——”

'Pratt,” says I. “Solomon Pratt.”

'Thanks. No. I wouldn't go so far to call him a friend; and yet he's t an enemy—not openly.” He smil- again, and the other chap—whose me I found out was Hartley—Mar- Hartley—smiled too.

'He's the man Van here belongs ” explained the Hartley one. They h smiled again.

I kind of jumped, I guess, when he d that. It began to look as if the ylum idea was the right one, and s feller that was coming was the eper.

'Hum,” says I, and nodded my head t as if the whole business was as in as A B C. “Do you belong to ybody?” I says to Hartley.

'I did,” says he, “but he's doing e.”

'Doing time?” says I.

'Yes,” says he, explaining, kind of patient like. “Up the river, you ow.”

I chewed over this for a minute, and I could think of was that the feller must be in a clock factory or a watchmaker's or something.

“Watches?” I asks.

Hartley seemed to be too tired of life to want to answer, but his chum did it for him.

“No,” says he. “I believe it was pearl studs on the showdown.”

Well, this was crazy talk enough for anybody. I didn't want to stir 'em up none—I've always heard that you had to be gentle with lunatics—so I went on, encouraging 'em like.

“Studs, hey?” says I.

“Yes,” says he. “He was a British beast, and Martin was all balled up in the Street at the time—away from his apartments a good real—and the B. B. annexed everything in sight.”

“Go 'long” says I, for the sake of saying something.

“Beg pardon,” says he.

“Nothing,” says I; and we stopped talking.

They seemed to enjoy the sail first rate, and acted as rational as could be, generally speaking. They didn't know a topping lift from a centreboard, so far as boat went, but that wa'n't strange; I'd seen plenty of boarders like that. But never afore had I seen two that acted or talked like them.

(To be continued)

A MORNING CALL

Yes, this is my busiest morning,
  My dishes are still in the pan;
I've churning to do and some baking,
  It's hard work to cook for a man.
Well, there, if this isn't the greatest,
  The minister's coming to call;
And of course it's my duty to ask him
  To dinner and supper and all.

Why, how do you do, Elder Junior?
  I'm so glad you came in today;
Just put down your cane on the hall-seat,
  You really and truly must stay.
We're going to have mince pie for
    dinner;
  I'm sure it will not be as nice
As those that your wife makes at your
    house,
  But I put in a handful of spice.

  No, Robert, you can't have a mouth-
    full
  I ought to have spelled p-i-e
Instead of just calling the name out;
  My sons are too little you see,
To have such rich food as a mince pie;
  But boys on a farm eat so much,
I have to keep stewing and baking
  My apples and doughnuts and such.

I beg you don't go off so early,
  You truly don't bother a bit;
My churning can wait till tomorrow,
  Come, see if our beans are not fit.
I'm afraid that the children annoy you;
  Oh, no, I am glad you can call;
Do come when you're ready to stay
    then
  To dinner and supper and all.

—Alice Annette Larkin.

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A rose to excite the admiration of everyone. True outdoor rose, very hardy and rapid, vigorous grower. Blooms all the time producing immense elegantly formed flowers of a magnificent silvery pink.

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Grace of form, charm of color and vigor of growth are three characteristics which make this one of the finest roses ever offered. In color, a deep golden yellow, marvelously rich and pure with exquisite fragrance. Very hardy in growth and an abundant bloomer.

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A most gorgeous and distinct rose of deep, brilliant rosy red. It grows to perfection in any soil in all sections of the country and blooms continuously the entire season bearing lovely immense flowers. For bedding purposes it has no superior.

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An indispensable rose for bedding or decorative purposes. Vigorous, healthy grower, quickly forming a shapely bush and producing in amazing profusion large, double flowers which delicately blend rose tints in center, gradually shading into pale blush and creamy white.

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This rose has been selected from the unlimited number of hardy roses as the acme of perfection. It is an upright, sturdy grower with beautiful, bronzy-green, insect-proof foliage and bears vast quantities of massive, deep cup-shaped flowers; color a clear, rich velvety-crimson.

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PENNSYLVANIA FARMER, 214-18 South 12th Street, Philadelphia, Pa.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., April 13, 1914.

Supplies of solid packed creamery butter were moderate and prices were well-maintained on all grades. Egg receipts were fairly liberal but there was a good demand and prices were well maintained. Receipts of fine desirable-sized stock were light and the market ruled firm but quiet. Fruits and vegetables were quiet.

Butter.—Western creamery, 28c; extras, 26c; firsts to seconds, 22@24c; special prints 32@35c; near-by prints 29c.

Eggs.—Candled 23@25c doz; extras 21½c. Current receipts at $6.00 per standard case.

Poultry.—Fowls, 18@20c; old roosters 12@13c; pigeons, 35@38c pair.

Dressed Poultry.—Western fowls 14@20c; roosters, 15c; turkeys, 20@26c; squabs $2@4.85 doz.

Vegetables.—White potatoes, Pa., 80@90c bu. Onions $2.50@3.00 per 100-lb. bag. Peppers $2.00@2.25 per crate. Eggplant $2.25@2.75 carrier. Lettuce $1.00@2.50 hamper. Beets 5@6c per bch. Sweet potatoes 40@50c hamper. String beans $2@3 per hamper Squash $2.50 per crate. Cucumbers Florida, $4.50@5.00 bas. Celery, $2.50@2.75 crt. Cabbage, new $1.25 per hamper.

Fruits.—Apples $5@6.00 bbl, Pineapples, per crate $3.00@3.50; pears, 75c basket. Cranberries $3@3.25 crt; lemons $2.75@3 per box; grape fruit $2@3 per box; oranges $2.50@4 per box.

Hay and Grain.—No. 1 hay, large bales, $18@18.50; No. 1 medium $17.50@18.00 no grade, $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00; straw No. 1 new straight rye, $16.50@17.00 No. 2 do., $15@15.50; No. 1 tangled rye straw new $12@12.50; No. 2 do., $11@11.50; No. 1, wheat straw, $10@10.50; No. 1 oat straw, $10.50@11; new shelled corn No. 2 yellow 77½@78c. Wheat No. 2 red 98@98½c; No. 1 Northern $1.03@1.04; No. 2 white oats 45½@45¾c; No. 3 white 44@44½c. Standard white 45@45½c.

Coffee.—Rio 7s 9c; Santos 4s 11¾c. Mild Coffee.—Cordova 12½@16½c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.15; powdered, 4c; granulated, $3.90; standard granulated, $3.95; crystal A, $3.90.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Beef hams, $40@42. Pork family, $23@24. Hams, cured, 13½@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10½@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6⅞c; country, 6¾c; do. dark, 5½c; do cakes, 7c.

Philadelphia Retail

Vegetables.—Onions 10c per quart. Peppers 40c doz. Eggplants 15@30c apc. Cabbage, 10c hd. Lettuce 2 and 3 for 25c. Beets new 10c bch, 3 for 25c. Sweet potatoes 15c ¼-pk. White potatoes, 30c ½-pk. String beans, 18@20c qt. Tomatoes, hothouse 6 for 25c; Squash 3@4 for 25c; Cauliflower 20@50c apc; mushrooms 40@50c lb; asparagus 30@50c bunch; cucumbers, 10@15c each; celery, 3 for 25c.

Fruit.—Apples 25c ¼-pk. Pineapples 20@40c apc. Cranberries 20c qt; lemons 18c doz; grapfruit, 2 and 3 for 25c; $1.50 per doz; Oranges 40@60c per doz.

BALTIMORE PRODUCE

Baltimore, Md., April 13, 1914.

In the Baltimore wholesale market, butter, eggs, and poultry were steady.

Butter.—Creamery, fancy 26½@27c; do choice, 24@25c; prints 27@29c; blocks 26@28c; Maryland and Penna. rolls, 17@19c; process, 20@22c.

Eggs.—Near-by firsts, 19c; western, 19c; southern, 18c.

Live Poultry.—Hens, 19c; chickens, 20@22c; old roosters 11c; ducks 18@19c.

Vegetables.—Potatoes, Maryland and Penna. 65@75c bu.; beets, 4@6c bch; beans, green $4@4.50 per basket. Celery $2.25@2.75 crate. Cucumbers, $4.50@5.00 bas. Lettuce $2.25@2.75 bas. Tomatoes $2.50@3.00 carrier. Onions $2.50@2.75 sack. Eggplant $3@3.50 crate. Squash $2@2.50 crate. Cabbage new $2.00@2.25 crate.

Fruit.—Apples, $3.00@5.50 bbl. Grape fruit $2.50@4.00 per box. Oranges $3.25@3.75 box.

Grain.—Wheat No. 2 red western 93¼c; Spot, 98¼c; corn yellow shelled, 79c; Oats standard white, 44¾@45c; No. 3 white 43½@43¾c; rye 60@70c.

Hay and Straw.—Timothy No. 1, $18.50; No. 2 timothy $17.00@17.50; do. No. 3, $15.00@16.00, No. 1, clover $16.00@16.50; No. 2, do., $13.00@15.00; No. 1, tangled rye straw, $12.00; No. 1 oat straw $11.00@11.50; No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $30.00. Middlings, flour to white $29@31; western middlings, $28.50@29.00; city mills, middlings, $28.50@29.00.

NEW YORK PRODUCE

New York City, April 13, 1914.

There is a fair interest in the butter market and a pretty good quantity of stock is changing hands. Eggs showed liberal receipts, a generally dull trade and a weak unsettled market. Fair demand evidenced for good poultry stock. Fruits and vegetables showed little change.

Eggs.—State and near by hennery whites, fine to fancy 22@23c; gathered whites 20½@21½c; fair to good 20½@21½c; fresh gathered firsts to extras 20@21½c; seconds to thirds, 17@18¾c; no grades 16@17½c; mixed 19½@20½c.

Butter.—Creamery firsts to extras 24@26c; thirds to seconds 19@23½c; state dairy 17@25½c; packing stock 12@16c; process 14@20½c.

Cheese.—Whole milk specials, 13¾@14c; do common to fancy, 13@13½c; skims 5@14½c.

Dressed Poultry.—Turkeys, dry, 21@23c; chickens, 14@25c; fowls, 16@19c; old roosters, 14½c; ducks, 8@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage 50@75c per basket. Green beans $1.00@3.25 bas. Carrots $1.25@2.00 bag. Cucumbers $1@1.75 doz. Lettuce $1.00@2.00 bas. Squash, $3@3.50 bbl. Celery $2.25@2.75 standard crate. Onions $2.25@2.75 100-lb. bag. Tomatoes, 75c@$2.00 carrier; peppers $2.00@3.00 per box. Beets, $4@6.00 per 100 bunches. Potatoes $2.50@8.00 bbl. Sweet potatoes, 40c@$1.10 bas. Eggplants $2@2.75 per box. Cauliflower $1@1.50 per ½-crate; asparagus $1.25@3 per doz bunches.

Fruit.—Apples, $2.50@7.00 bbl. Cranberries $11.00@14.00 bbl. Grapefruit $1.00@5.00 per box; oranges, $1.25@4.00 per box.

Grain.—Wheat No. 2 red $1.04, No. 1 Northern, $1.00½; corn, No. 3 yellow 76c; oats, standard white 43½@44c.

YORK PRODUCE MARKET

York, Pa., April 13, 1914.

The markets showed considerable activity over the Easter holiday. Eggs advanced 2 cents. Butter is lower. Flowers were offered in abundance.

Eggs.—19@20c doz.

Butter.—Country, 28@33c; separator, 32@36c. Milk, 6c per quart. Cream 12c per pint.

Poultry.—Scarce. Hens 15@17c. Dressed poultry, 50@90c each.

Vegetables.—Potatoes 12@16c ½-pk; 85c @$1.00 bu; cabbage 3@8c each; lettuce, 3@8c; beets, 5c bch; radishes 5c bunch; onions 3c buch, 15@18c per ½-pk; lima beans 14@16c qt; sweet potatoes, 14@16c per ½-pk; lard 14@16c lb; celery, 10@12c; peppers, 8@12c doz; turnips 10@12c ½-pk; soup beans, 10@12c qt; sauer kraut 8c qt.; apple butter, 22@25c qt.

Fruit.—Apples, 25@40c ½-pk; pears, 15@20c per ½-pk; chestnuts, 12c quart; walnuts 15c per ½-pk.

Retail Grain Market.—Wheat, $1.09 bu.; corn, 84c; oats, 56c; rye, 77c; bran, $1.60 cwt; middlings $1.60 cwt.

Wholesale Grain Market. — Wheat, 97c; corn, 74c; oats, 45c; rye, 67c.

WASHINGTON PRODUCE

Washington, D. C., April 13, 1914.

Eggs.—Per dozen, 19c.

Live Poultry.—Hens, per pound, 18c; roosters, 11c; springers, 23@25c.

Vegetables.—Potatoes, $2.15@2.50 sack; Onions, $2.00@2.50 bu; Lettuce per bsa., $1.00@3.00. Peppers $2.00@4.00 crate; Eggplant, $2.00@2.50 crate. Beets new $6@7 per 100 bchs. Carrots 5@6c per bch. Cabbage $1.25@1.50 bas. Cucumbers $3.50@5 bas. Sweet potatoes 50c@$1.50 per bbl. Celery per doz., 60c@$1. Tomatoes $1.50@2.75 crate. Cauliflower, $1.50@2.25 per ½ crate. Asparagus $1.75@3.50 per doz bchs.

Fruit.—Apples, $4@7 bbl. Pinapples, $3@3.50 crt. Cranberries, $2.75@3 small box Grapefruit, $3.00@4.00 crate.

WILMINGTON PRODUCE.

Wilmington, Del., April 13, 1914.

Butter.—Print butter, 38@45c lb. Creamery roll, 35@45c.

Poultry.—Chickens, dressed, 18 @ 25c; ducks, 18@20c.

Eggs.—30@35c doz.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk. Cabbage, new 4c up. Sweet potatoes 40@50c bas. Onions 20@25c ¼-pk; new 20c qt. Eggplants 10@15c ea. Peppers 30@50c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch. Cauliflower, 20@25c each.

Fruit.—Apples, 15@25c ¼-pk. Pineapples 20@25c apiece. Grapes 20@25c lb. Oranges, California, 25@30c doz. Florida, 25@30c doz. Bananas, 10@15c doz. Cranberries 20c quart. Grape Fruit, 7@10c each.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., April 13, 1914.

Beef Cattle.—A more satisfactory undertone pervaded the market and the better class of cattle realized full rates. Pennsylvania and Western stock in larger numbers sufficiently met the current needs. The most desirable cows were held a bit firmer while calves closed steady at former prices.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,820	8,222	5,470
Previous week	2,556	9,370	4,933

Best steers	$8.60@8.80
Choice steers	8.40@8.50
Good	8.00@8.25
Medium steers	7.50@7.75
Common steers	7.00@7.25
Bulls	5.00@7.00
Fat cows	5.50@6.50
Medium cows	3.75@4.75
Thin cows	2.75@3.75

Veal calves steady.

Best calves	$10.00@11.00
Good to choice do	9.00@10.00
Medium	7.50@8.00
Common do	6.50@7.00

Sheep and Lambs.—The top grades ruled a fraction stronger, with all other stock keeping fairly steady. Arrivals were on the increase and improved conditions prevailed, the outlook being favorable.

Choice wethers	$6.00@6.25
Good do.	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.50@8.75
Good to choice do	$8.00@8.25
Common to medium	4.50@8.00

Hogs.—Inquiry was about seasonable at the prices with demand of a seasonable character. Westerns as to size and quality $12.50@12.75.

City Dressed Stock.—Every variety of choice and prime meat commanded steady prices with trade a trifle more active. Steers, 12@14c; heifers, 10½@13c; cows, 9@11½c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 9@11c; extra wethers, 12c. Spring lambs 13@14c. Hogs 12¾@13c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., April 13, 1914.

Cattle.—With a light supply on sale again 80 loads, the market ruled active and generally 10 to 15 cents per cwt. higher on all grades. The tidy fat steers of the light weigth and heavy grades were on better demand, also choice heifers and fat cows, and tidy 1,000 to 1,300 pound bulls, while stock on the bologna order was easier. Best fresh cows stronger; other grades and springers only steady. Today's supply was 90 loads. With a fair demand the market was active and stronger on all desirable grades.

Good to choice	$8.80@9.10
Good 1,300-1,400 lb	8.65@8.80
Medium to good 1,200 1,300 lb	8.25@8.50
Tidy 1,050-1,150 lb.	8.25@8.50
Fair to medium, 900-1,100 lb	6.75@8.15
Rough, half fat, 1,000-1,300 lb	5.00@7.00
Common, 700 to 900 lbs.	5.50@6.50
Common to good fat oxen	4.00@6.50
Common to good fat bulls	5.00@7.90
Common to good fat cows	4.25@6.75
Heifers	5.50@8.00
Bologna cows	3.75@4.25
Fresh cows and springer	25.00@85.00

Calves.—Supply of calves liberal all week. The close for the week was $1 per cwt. lower than Monday's prices. Today's receipts were 700 head, and the market ruled slow and 25 cents lower.

Heavy and thin calves	$5.00@ 7.00
Veal calves	7.00@10.25

Sheep and Lambs.—Sheep and lambs have ruled in fair supply, and with only a fair demand the market has ruled easier on both sheep and lambs. Choice springers in demand and sold higher, while outlook for this grade after Easter is easier. Today's receipts were 20 double-deck loads. With a fair demand the market was slow, the choice sheep sold higher, and choice lambs ruled firm. Other grades of sheep and lambs sold steady. Spring lamb receipts were light and the market ruled steady.

Prime wethers	$5.75@6.00
Good mixed	5.40@5.60
Fair mixed ewes and wethers	4.50@5.25
Culls to common	3.00@4.00
Prime lambs	6.00@7.35
Clipped lambs	5.00@7.25
Clipped sheep	5.80@6.00
Spring lambs	9.00@12.00

Hogs.—The supply during the mid-week was light and prices ruled considerably higher, top grades selling at $9.50, while with more liberal receipts the latter part of the week, the close for the week was the same as Monday's prices. Today's receipts were 50 double-deck loads. The market ruled 5 cents lower than last week.

Prime heavy	$9.20@
Heavy mixed	9.25@
Prime medium weights	9.25@
Best heavy Yorkers	9.25@
Light Yorkers	9.20@
Pigs	9.00@
Common to good roughs	7.75@8.35
Stags	7.00@7.25

BUFFALO LIVE STOCK

Buffalo, N. Y., April 13, 1914.

Cattle.—The week opened with cattle active, and firm even with liberal receipts. Choice butcher steers were in good demand thruout the week. Good feeders sold at $7@7.35. Milk cows and springers were in good demand. The close was slow. Today's receipts were 3,000 head, and the market ruled 15@25 cents higher.

Choice heavy steers	$8.85@9.40
Fair to good	8.25@8.45
Yearlings	7.75@8.65
Handy butchers	7.00@8.50
Good to choice fat cows	6.75@7.15
Good to choice heifers	7.50@7.85
Butcher bulls	6.00@7.50
Feeders	5.50@7.35
Cows and springers	30.00@85.00

Calves.—The market opened with a good demand and prices unchanged. On the close the trade was slow and of a holiday character. Today's receipts were 1,200 head, and prices ruled lower.

Choice veals	$10.00@10.25
Lights and thin	6.00@ 8.75

Sheep and Lambs.—The week opened lower with a liberal supply. The supply of yearlings was moderate and only a light demand. Clipped stock is now showing up, lambs selling on the basis of $5@7.25. There were also a few clipped sheep. On the close the demand was fair for choice stock. Yearlings were stronger. Today's supply totaled 12,000 head, and prices ruled higher.

Choice lambs	$8.75@8.85
Yearlings	7.50@8.00
Wethers	6.75@7.00
Ewes	6.25@6.50
Sheep	6.00@6.25

Hogs.—The week opened with a fair supply and active demand, while prices were a shade higher. Common hogs were easier. The week closed with a good supply, an active demand and 5@10c lower. The basis was $9.30@9.35. Common grades were in moderate demand and lower. Today's receipts were 17,600 head. Prices ruled lower.

Heavies	$9.20@9.25
Mixed and medium	9.20@9.25
Yorkers	9.20@9.25
Light Yorkers	9.20@9.25
Pigs	8.75@9.00
Roughs	8.20@8.25
Stags	7.00@7.50

Horses.—Offerings numbered about 800 head. Prices were fair at last week's figures on heavy workers. Drivers sold fairly steady. There was a fair demand for horses today.

BALTIMORE LIVE STOCK

Baltimore, Md., April 13, 1914.

Cattle.—Receipts for the week 1,537 head against 1,317 last week.

Steers	$6.25@8.35
Heifers	5.50@6.75
Cows	3.00@3.75
Bulls	5.25@6.75
Fresh cows	32.50@72.50

Sheep and lamb receipts for the week were 3,017 head against 4,200 last week. Light supply; market higher.

Sheep	$3.25@6.00
Lambs	6.50@8.85

Hog receipts for the week were 12,567 head against 9,224 last week.

Light western	$9.55@9.60
Heavy to medium	9.35@9.60
Near-by	9.25@9.55
Pigs	9.50@9.75

Calves.—Receipts for the week were 380 head against 271 head last week. Light supply, market higher at $6.50@10.25.

NEW YORK LIVE STOCK

New York City, April 13, 1914.

Beef Cattle.—Receipts for week 3,500 head. Market irregular.

Steers	$6.50@9.50
Bulls	5.50@8.00
Cows	3.35@7.00
Dressed beef	13@17c.

Calf receipts 8,800 head. Market lower.

Choice	$8.50@12.00
Culls	6.00@ 6.50

Dressed calves lower. Dressed veals 13@17c.

Sheep and lamb receipts 10,100 head. Market higher.

Sheep	$4.75@6.50
Spring lambs	7.50@9.00

Hog receipts 7,700 head. Market lower. Choice $9.15@9.30.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., April 13, 1914.

Hay.—Receipts to this market since the beginning of the month are the lightest for the same length of time in the recollection of feeders. Reports are that shippers are unable to load as the roads are hub deep in mud. Any shippers who have consignments ready to come forward should send them immediately and take advantage of the pr strong prices, as it is feared that the ma ket will be easier later on. Sound hay almost any description can be readily p at the present moment.

No. 1 timothy	$18.00@1
No. 2 timothy	15.50@1
No. 1 light mixed	16.00@1
No. 1 clover mixed	15.00@1
No. 2 clover mixed	12.00@1
No. 1 clover	14.50@1
No. 2 clover	11.00@1

Straw.—Better demand for straw; ceipts not heavy but equal to demand. M ket steady.

No. 1 Oats	$9.00@
No. 2 Oats	8.75@
No. 1 Wheat	8.75@
No. 2 Wheat	8.50@
No. 1 Rye	9.25@
No. 2 Rye	8.50@

Ear Corn.—Market is bare of good, yellow ear corn. While the demand is cellent there is not enough coming to supp same. A few shipments of ear corn bring good prices.

No. 2 yellow	76½@
No. 3 yellow	73@7

Oats.—There is quite an active demand oats which takes care of all arrivals. ket strong.

No. 2 white	43¼@4
Standard oats	42½@43
Standard No. 3 oats	41½@42

NEW YORK HAY MARKET

New York City, April 13, 191

The market for hay rules fairly Demand is mainly for the better Timothy, No. 1, $1.05@1.10 bale; stand $1; No. 2, 95c@$1.00; No. 3, 85@9 clover, 60@95c.

The straw market remains dull. Oat st 55@60c; rye straw, 90c.

CHICAGO HORSE MARKET

Chicago, Ill., April 13, 191

Horses that graded well sold all right week with no heavy supply. A high Belgian that weighed over 1,800 po brought $365, but sales up to $300 w few, fair to good drafters being sal around $225@275. Farm geldings sold $140@200 per head and a good choice o of farm mares at $190@225. Inferior mals brought $50@100, and drivers at $100@200.—F.

NEW YORK MILK MARKET

New York City, April 13, 191

The only change in the market condi last week was an augmentation of the plus. The Jewish holidays cut down demand in a marked degree. The pas zation edict of the Department of Health teeth in it. This, a score of Jewish de have recently discovered. Most of however got off with a fine. One setenced to imprisonment for a period.

The receipts of milk and cream in 40-q cans for the week ending April 11 wer follows:

Railroad	Milk
Erie	46,625
Susquehanna	8,097
West Shore	18,502
Lackawanna	58,875
N. Y. Central (long haul)	82,042
N. Y. Central (short haul)	11,750
Ontario	37,569
Lehigh Valley	35,955
Homer Ramsdell Line	2,050
New Haven	7,889
Pennsylvania	5,599
Other sources	1,670
Totals	316,153

ELGIN BUTTER QUOTATION

Elgin, Ill., April 13, 191

The quotation committee of the Board of Trade this afternoon declared ter firm at 25@25½ cents.

TOBACCO MARKET

There was no marked change in the cal market situation during the week. few sales to packers were reported at practically the same as in past weeks. few crops were delivered to the new leaf Growers' Association this organ having held several meetings at d points during the week. Up to the p time practically two-thirds of the 1911 remains in growers' hands. Local pa seem afraid of the situation and the concerns are not in the market. The pect of an early sale of the residue of 1913 crop is not at all encouraging at time. Preparation for the crop of the ent year was further delayed by the tinuation of unseasonably cold weather cluding freezing temperature and ch rains. In some communities very few beds have been made and all prepara operations are delayed.

No large transactions were reported the general tobacco market. The situa was characterized by small offerings steady prices. The crop outlook in York is favorable to a larger acreage generally increased interest in tobacco ters. In Wisconsin the crop will be a average one. In Ohio the enforced low age of last year will, it is claimed, be fu reduced the present year, the reasons the scarcity of labor and the general that land can be planted in corn with profitable results, especially when this is fed to hogs at present prices. In section there was a good demand for cigar leaf and the home demand also up well. There will be more zimmer and Dutch and seedleaf grown the present Growers in the Ohio section are more or hindered by poorly matured seed the sult of the early freeze last fall.

That tobacco growing is a well-estab industry in this section and one dese of more profitable returns to growers evidenced by the fact that it has grown here for a hundred years or more early as 1840 Lancaster county grew pounds as shown in the census of that During the civil war the production small as so many growers were in the and those at home thought it better to the more-needed wheat and corn. In the average yield per acre was 1,409 p and the average price was $15 per cwt. estimate is recorded in which it is said growers realized an average of $295 acre with a net profit of $162. In a exceptional instance a grower sold his for $640.08 per acre with a net prof $450. A sharp contrast with the situat present'—H. E Tweed, April 13, 1914

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The Great French Veterinary Remedy.
A SAFE, SPEEDY & POSITIVE CURE.

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in each town to ride and exhibit sample 1914 bicycle. *Write for special offer.*
Finest Guaranteed 1914 Models **$10 to $27**
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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our ubscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Poll-evil.—I would like to know the cause of poll evil and treatment for same. L. S. D., Bridgeton, N. J.—The most common cause of poll-evil is a bruise; however, the disease is not now nearly as common as it was when the doors and ceilings of stables were low. An abscess may also form on the poll following an irregular attack of distemper, or blood poison. First apply hot water, then apply tincture of iodine or equal parts tincture of iodine and spirits of camphor; or put on 1 part iodine and 15 parts fresh lard. As soon as you think the swelling contains pus, it should be allowed to escape by opening it freely, then treat it as an ordinary abscess by injecting into the pocket some peroxide-hydrogen, following it with a few applications of tincture iodine. Then apply 1 part bichloride mercury and 250 parts water, or 1 part carbolic acid and 20 parts water. It is important to use the serum treatment hypodermically.

Infected Wound.—Last fall one of our horses had a fork prong run into his leg, near top of hoof. It became inflamed, formed pus and opened, but appeared all right; however, the swelling remains. I have applied nearly everything I know of with no apparent relief. At the present time it is not forming pus but is badly swollen. The swelling is low down, is very hard and foot has a foul smell. W. P. D., Quarryville, Pa.—Doubtless the foul odor comes from frog, the result of thrush. If so you had better apply hydrogen peroxide, once a day, and 1 part carbolic acid and 15 parts water, twice a day. Later apply calomel. To swollen part of leg you had better apply 1 part tincture iodine and 3 parts camphorated oil twice a day.

Horse Coughs.—We have a 4-year-old horse that usually coughs after drinking cold water. When traveling slow it does not bother him. I have noticed him hacking when driven fast. L. S. R., Stoneboro, Pa.—Give him ½ oz. powdered licorice, a tablespoonful of ground ginger and a teaspoonful of muriate of ammonia at a dose in feed, 3 times a day. The cold chill had better be taken off his drinking water and he should be fed no clover, or dusty, musty fodder.

Hogs Have Worms.—Several of my hogs are troubled with worms. Simple remedies fail to kill the worms. O. A., Lambertville, N. J.—Mix together equal parts fluid extract of spigelia and fluid extract of senna and give each of your hogs ½ oz. at a dose, 2 or 3 times a day until purging sets in. Then discontinue its use for a week or ten days. Very often you will find it necessary to treat your hogs a second time. Best results are obtained by giving vermicides when the animal is fairly empty.

Cough.—I have two colts that seem to be thriving, but both of them have a severe cough. Will you kindly prescribe for them? K. W. R., Centreville, Pa.—Mix together equal parts muriate ammonia, ginger and licorice and give a dessertspoonful at a dose in feed, 3 times a day. If their throats are swollen, apply 1 part turpentine, 1 part aqua ammonia and 3 parts olive oil, once a day for a few days.

Clipping Horses.—Many farmers used to object to clipping horses in the spring, holding that it was an interference with the natural shedding of the coat. They forgot that the horse of today is being kept under unnatural conditions. The experience of horsemen and farmers disproves the objections to clipping. Spring clipping aids condition of animals when their services are most needed and insures against spring disorders incident to breaking into hard work. Clipping machines are now within reach of all farmers and are equipped for use on horses, mules and cows. A postal card request addressed to the Chicago Flexible Shaft Co., 245 Ontario St., Chicago, Ill., will bring full particulars and information on machines and clipping.

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Environment doesn't make a man—or a "Bull" Durham smoker. There are red-blooded, self-reliant, energetic *men* in every walk of life—and these are the millions of men, of all classes and occupations, who find thorough *satisfaction* in the fresh, fragrant cigarettes they *roll for themselves* from "Bull" Durham tobacco.

The rugged millionaire sportsman and his able-bodied guide in the great North woods are at opposite ends of the false social scale; but in the true *measure of manhood* they meet on an equal footing—share the same sack of "Bull," and respect each other for being *men.*

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Ask for FREE book of "papers" with each 5c sack
SMOKING TOBACCO
FREE An Illustrated Booklet, showing how to "Roll Your Own," and a Book of cigarette papers, will both be mailed, *free,* to any address in U. S. on postal request. Address "Bull" Durham, Durham, N. C., Room 1114

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OUR GUARANTEE

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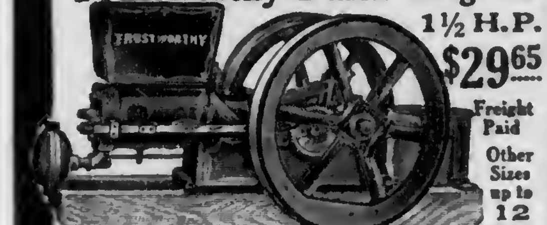
Nothing to Pay When Goods Arrive

Trustworthy Farm Engines



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Freight Paid
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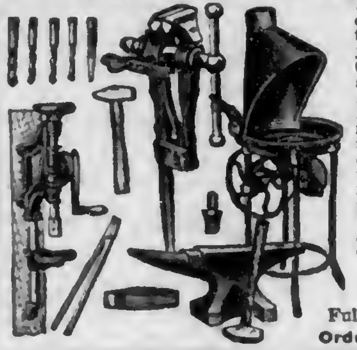
Without doubt the greatest of all farm engines. Lifetime guarantee. Write us your needs and our experts will be glad to supply you full information. See catalog for full description.

No. 28A1000—on skids, each.. **$29.65 Freight Paid**

Farm Blacksmith Outfit



This money saving outfit consists of one Lever Forge with 19 in. hearth, one drill with 6 tools, one steel jawed vise; one 60 lb. anvil, steel faced; one Blacksmith's Hammer; one riveting hammer; one cold cutter; one pair tongs; one hardie; one round punch. Complete outfit,

Freight Prepaid.

$18.75

Fully Guaranteed.

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Easiest to run, easiest to keep clean, gets most cream, and any thickness of cream you want—Saves its cost first year. Built for hard, practical every day use. If not satisfactory in every way your money back.

60 days trial allowed. Free catalog fully describes this splendid machine and larger sizes.

No. 34 A 2—200 lbs. capacity per hour, each **$23.50**

Evercote Ready Roofing

$1.05 Per Roll and up.

Will last longer than shingle, tin or steel roof. Greatest of all roofs for houses, poultry pens, barns and sheds.

1 ply guaranteed 7 years.
2 ply guaranteed 10 years.
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Write for Free Samples. See how heavy and strong it is. 108 sq. ft. in each roll. Nails and cement free. We pay freight on 3 rolls or more.

26 A 2000. 1 ply. Per Roll,	$1.05
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70 Egg Hot Air Incubator

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$4.25 Greatest Incubator bargain ever offered. Fully equipped with regulator, egg tester, thermometer, egg tray and lamp. See our Free Catalog.

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Dolly Varden Dress

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Each $1.00

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16c per Rod

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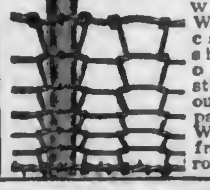

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No. 5 A 1057 Golden Oak or Birch Mahogany, each $3.85.

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New York Pattern

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The Milk Cans To Buy

Inside bottom hoop thoroughly tinned; have drop handles.

5 Gal. Size of neck 6⅛ in. Weight about 15½ lbs. Price . . .	$1.99
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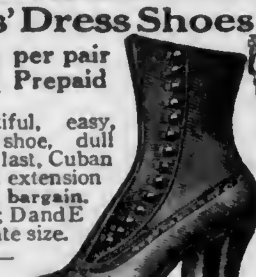
A beautiful, easy, gun calf shoe, dull tops, neat last, Cuban heels and extension soles. A bargain. Sizes 2½ to 8; D and E widths. State size.

No. 7A 518—Per pair, **$2.19** Prepaid



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MEDIUM WEIGHT

$28.90 Freight Paid

This is a strong well made Harness. Furnished with square blinds, breast chains and 3 1-2 ft. heel chains on traces. Traces are 1 3-4 in. wide, double and stitched. Breeching, heavy folded, harness leather, double and stitched. See catalog for full description. Fully guaranteed.

No. 32A 410—Team Harness, without collars. Freight Paid, **$28.90**

5 Drawer Sewing Machine

Guaranteed 20 yrs. Automatic Lift, Ball Bearings, Full Set of Attachments. Complete

$15.60

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Send for full description or order direct on our guarantee of satisfaction. 90 day trial allowed.

No. 14 A 629—Sewing machine Frt. paid east of Rockies only **$15.60**

BALL BEARING LAWN MOWER

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No. 1A2001. **High Grade in every particular.** Has 10 inch drive wheels. Four tempered tool steel cutting blades. Crucible tool steel lower knife, hardened and tempered. Ball bearings are tool steel and have cone adjustment. Mower is nicely painted. Width of cut 16 inches. Shipping weight about 43 pounds. Price **$5.25**

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Men's Long Wear Work Shoes. Built for every day use. Stock is unlined Kangaroo grain. Blucher cut, bellows tongue, Oak soles. Sizes 6 to 12. No half sizes. State choice color.

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7A 905—Brown, per pair...$2.25
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Vol. 35—No. 19. PHILADELPHIA, PA., SATURDAY, MAY 9, 1914. 2 Years for $1.00.

Headle Dr T J
Rutgers College
214

Among Our Neighbors

With Charles Sweigart, Chester County, Penna.

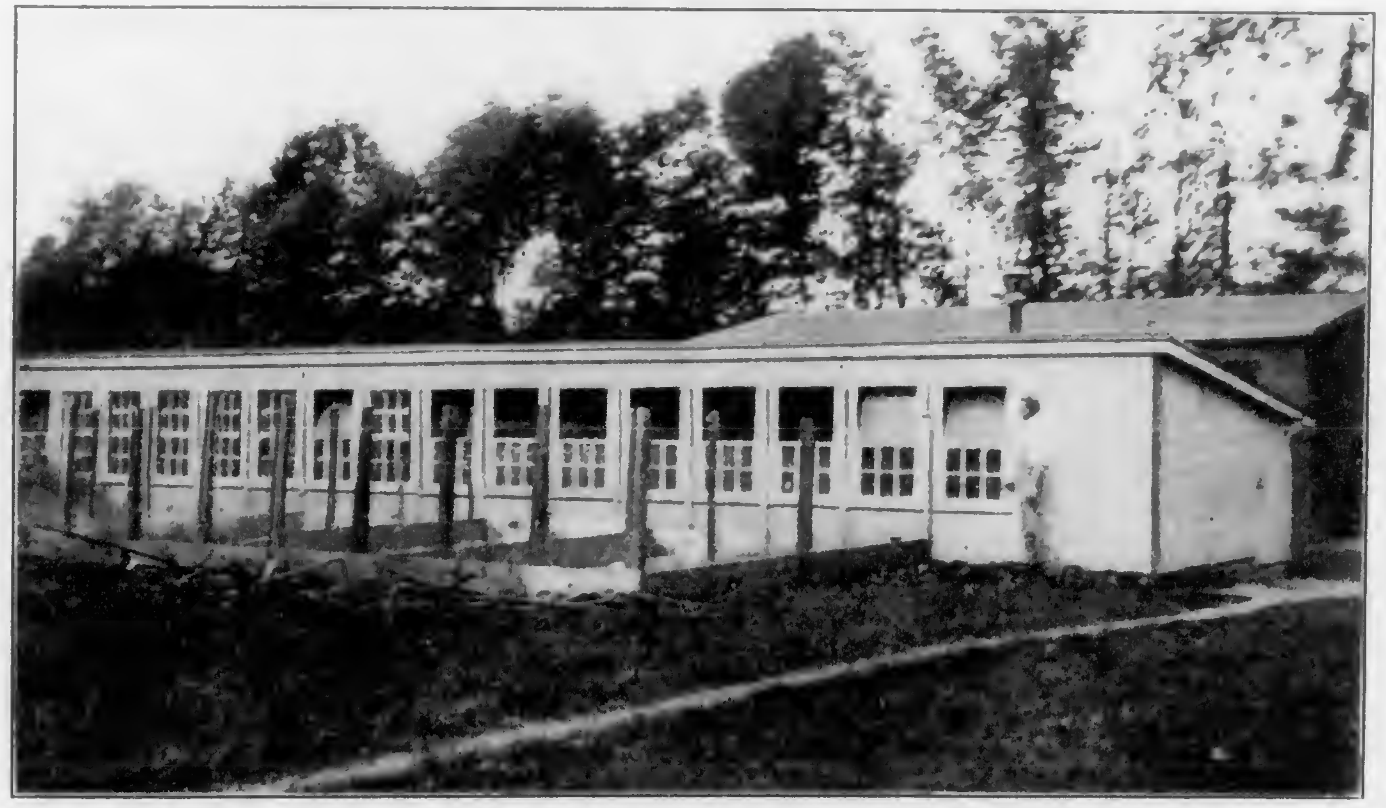
It is frequently asked of a man who has made a success in business whether the job made the man or the man made the job. If he has made a genuine success, it is usually found that the man constitutes about 90 percent of the job. This is as true in farming as in any other line of business. The job of developing a life business on about 30 acres of tillable land, and making it yield an income comparable with other professions, is one that most men would consider a right sizable undertaking. And to succeed in such an undertaking requires a right sizable man—a real 100 percent man.

This was the proposition that confronted Mr. Charles Sweigart, of Chester County, some ten years ago. Possessed of a genuine love for farming, he was able to see possibilities in the small farm belonging to his father-in-law that other and older farmers had never dreamed of. He had practically nothing but a stout heart, strong and willing hands and a clear brain to start with; but these constituted his equipment for his life work, and he chose the farm as being the best and most promising field for their use. The way in which he has applied his resources and the success that he has achieved in developing little Ivywood Farm are at once an inspiration and a guide to other young men who may be similarly situated.

Using his brain first, he laid definite plans for the development of a permanent business plant which should pay its way and increase in value and productive capacity as it matured. With but thirty acres to work with, it was obvious that he must adopt a plan that would permit the practice of intensive methods and that he must specialize in a few lines. After careful consideration he determined upon a combination of poultry and dairying. The farm buildings were not suited to either branch, so Mr. Sweigart had to start at the bottom and remodel and build as profits would permit. It has been a struggle and there is still much to be done to complete the equipment, but the end is in sight and the plant is now in position to care for its future needs.

With absolute faith in purebred live stock, Mr. Sweigart has been working toward the time when all of the stock on the place should be of pure breeding from good family lines. This was more easily reached with poultry than with his dairy herd. For this reason the poultry business has been pushed faster and has been used to carry the preliminary dairy work to some extent. In the breeding of his flock, all of which are purebred White Leghorns, and in poultry equipment, the plant is nearly completed. The two illustrations on this page show the two main poultry buildings.

THE LAYING HOUSE WHERE LAYERS ARE CONFINED THRUOUT THE YEAR.



BROODER HOUSE ON FARM OF CHAS. SWEIGART, CHESTER CO., PA.

The brooder house is a model of its kind. It is 14½ by 52 feet, substantially built thruout and equipped with a modern brooder outfit. The foundation and floors are of concrete. The interior is divided into 15 compartments, each practically 3 feet wide. Each of these compartments is divided to give a seven-foot runway for the chicks and three feet to the brooder. A four-foot feed alley runs the length of the building. The brooder outfit has a hot-water heating system which has given excellent satisfaction. The heater is as nearly automatic in its operation as is possible to secure and one man is able to keep it running smoothly even when all fifteen brooders are in use.

The general system of management in the poultry department is now pretty well established. The incubators are started the latter part of January so as to bring the first chicks about February 15. The eggs for hatching are all produced on the farm by the breeding flock especially selected for the purpose the previous fall. In 1913, the brooders were started about the middle of February, and about 2,500 birds were turned thru from 3,500 eggs. The average efficiency on the incubator last year was 70½ percent, and on the brooder (the first year it was used) 75 percent on the season's work. Mr. Sweigart says that the latter is not as good as it should be this year when he will have the benefit of a year's experience in the operation of the equipment.

As soon as the chickens are hatched out, they are brought to the brooder house where they are apportioned about 65 to a brooder, giving the building a capacity of 975, or 1,000 with a little crowding. The chicks are pushed along on a ration of cracker crumbs and rolled oats moistened with sour milk for the first 10 days, when they are gradually worked to a mash of equal parts by weight of bran, middlings, corn meal and beef scraps. This last is fed in pans from the end of the first week. Moist mash is essential for quick growth. Grains are fed in the litter from the start.

The cockerels are separated from the pullets at an early age and are put on force feed and sold as broilers as soon as they reach a weight of from one to one and a half pounds. Sales of broilers last year ranged from 65 cents to $1.10 per pair, 877 birds being disposed of in this way. The pullets are turned upon open range when ready to leave the brooder. A sufficient number is retained each year to maintain a laying flock of about 550 pullets and 100 old selected hens for the breeding flock. The surplus pullets are sold as layers at the uniform price of $1 each when 3 months old.

About September 1, of each year, the laying flock of the previous year is disposed of, last year bringing an average of a little over 75 cents each. The pullets are then brought in and placed in the laying houses. The main laying house is an open-front structure shown in the illustration on this page. It is 14 by 42 feet, two stories high. Each floor is divided into 3 compartments, each 14 by 14 feet. The birds are graded according to size.

(Continued on page six.)

Farm Crop Notes

By R. P. KESTER.

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

NATURAL METHODS OF SOIL IMPROVEMENT

Cover Crops, Catch Crops and Sods.

That the common practice of agriculture has not maintained the normal amount of humus in the soil is very patent to any one who will take the trouble to compare virgin soil with that which has been under cultivation for a number of years. That the normal amount of organic matter can be maintained and increased has been exemplified many times by successful farmers who have been careful to make use of cover crops, catch crops and heavy sods. These crops take up and save the soluble plant food, prevent washing, and furnish humus-making material. These plants, when turned into the soil, improve its mechanical condition, increase its water-holding capacity, add plant food, and in the process of decay make available the plant food in the inert soil.

The practice of allowing a field that has grown a cultivated crop, such as corn or potatoes, to lie bare over winter is a most unwise one. Besides the loss from winds and erosion, the unused nitrogen, made available by cultivation and heat of summer, is very readily leached down thru the soil and lost. Except in excessively dry seasons, it is possible to prevent this by sowing a cover crop ahead of the cultivator at the last cultivation. In the neighborhood of the 40th parallel, crimson clover is at home and makes one of the best of cover crops. Like all legumes, lime and inoculation are necessary for complete success, but after persistent trials it will succeed thru self inoculation. North of the 40th degree, rye and winter vetch sown together, in the proportions of one and one-half bushels of rye and one-half bushel vetch seed make one of the best cover crops known. This crop may be sown successfully much later than crimson clover. It is often best to disk the ground after corn, potatoes or other crop is harvested and drill in the seed for this cover crop.

These two crops, crimson clover and rye and winter vetch, are most desirable because they furnish a maximum amount of both nitrogen and humus and fit in best on land that has produced a crop during the season. On soil that has not yet been brought to the condition where it will grow a legume, rye, or rape, alone should be sown as a cover crop. While these plants do not add any plant food, they will store up what would otherwise be lost, and also they add the much-needed humus.

It very frequently pays to lose the use of a field for a season in order to grow a crop of green manuring. Some of the best crops for soil improvement, in addition to those already named are cow peas (for the warmer sections) soy beans and Canada field peas and oats. The faith of the southern farmer can be pinned to the cow pea to rejuvenate the depleted south land. In fact it has performed almost the miraculous where it has been wisely used. There is plenty of evidence for believing that the soy bean will do the same thing for the northern farmer as soon as he is fully convinced that it is practical and wise to grow crops for the special purpose of soil improvement.

The Wilson variety of soy bean seems to be one of the best adapted varieties for northern latitudes. They should not be sown until warm weather is certain to follow, say after corn-planting. They may be either drilled in broadcast, or, by using the two end and the middle hoes of a grain drill, put in rows 27 or 28 inches apart and cultivated two or three times. While the latter way requires a little more work, it is a saving of seed and about as much material will be grown.

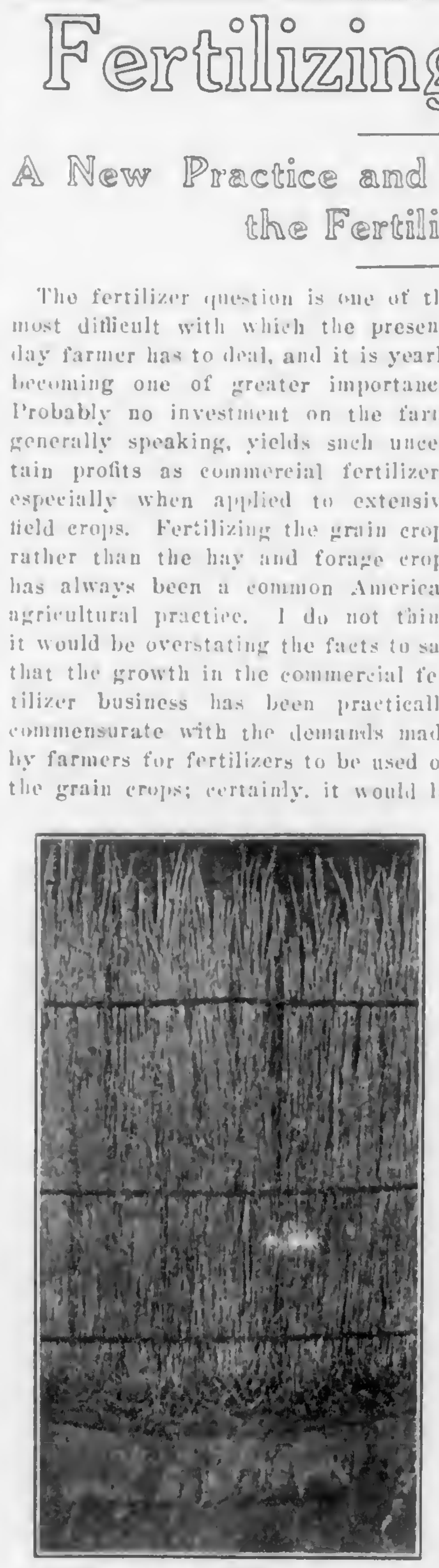
These crops make good orchard cover crops, and are used by most of our best orchardists. Market gardeners and other intensive farmers use them and to their use a great part of the productiveness of their land is due. The general farmer might make use of the same means, and I will go farther and say he must make use of some of them if he would stay in business. It is sometimes a good practice to sow oats or buckwheat between the rows of small fruits, black berries, raspberries, strawberries and the like. If the seed is sown in mid summer a good covering is secured which will die down during the winter and seed is not matured.

One of Nature's best soil coverings and providers of humus is a good grass sod. Too often the so-called sod is so thin that it does not add much material to the soil. This is because sufficient good seed has not been sown, and because the grass has not been fed. The growing of hay is not any harder on land than growing other crops if given fair treatment. The small average yield of hay, one to one and one-half tons per acre, shows that the average acre has on it a very thin sod. A field producing two to three tons of timothy hay has on it a genuine sod, one such as all fields need occasionally. This yield is possible on any fairly good land provided clover has been grown first, plenty of good seed used and the grass top-dressed with manure or fertilizer rich in nitrogen. Try it and see.—R. P. K.

Fertilizing Timothy

A New Practice and a Probable Solution of the Fertilizer Problem.

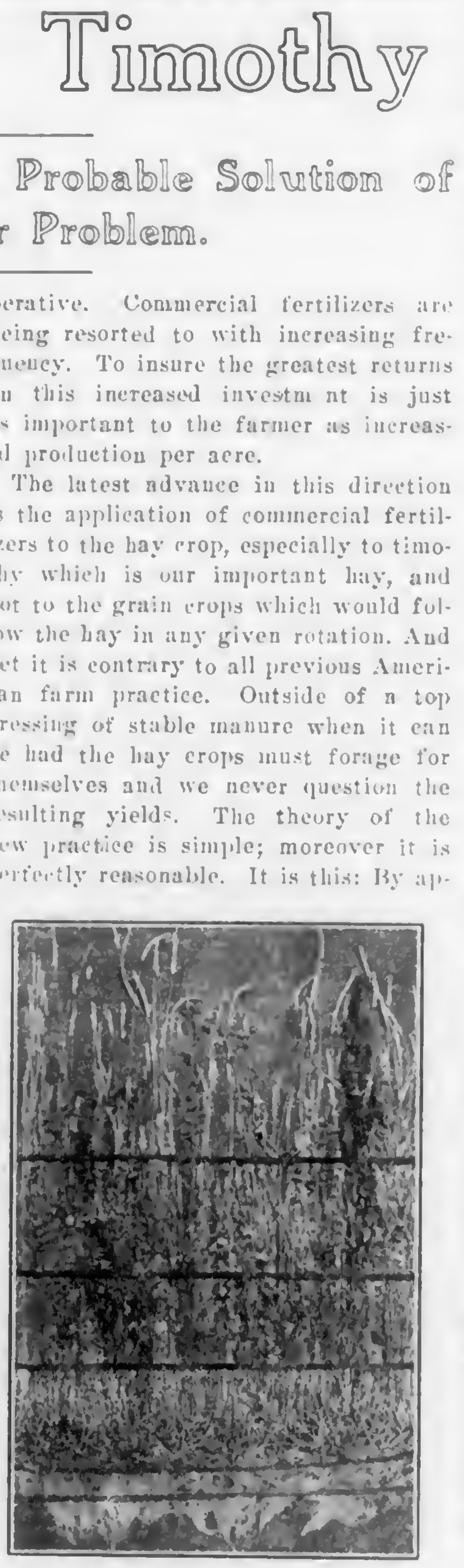
The fertilizer question is one of the most difficult with which the present-day farmer has to deal, and it is yearly becoming one of greater importance. Probably no investment on the farm, generally speaking, yields such uncertain profits as commercial fertilizers, especially when applied to extensive field crops. Fertilizing the grain crops rather than the hay and forage crops has always been a common American agricultural practice. I do not think it would be overstating the facts to say that the growth in the commercial fertilizer business has been practically commensurate with the demands made by farmers for fertilizers to be used on the grain crops; certainly, it would be true to say on all crops other than hay or forage.



TIMOTHY GROWN ON FERTILIZED PLOT.

Of the more than $114,000,000 worth of commercial fertilizers used in the United States in 1909, it is estimated that seven-eighths was used within three hundred miles of the Atlantic coast line. Pennsylvania alone spent nearly $7,000,000 or about one-seventeenth of the value of all the fertilizers used in the United States for that year. Increased production per acre under present economic conditions seems imperative. Commercial fertilizers are being resorted to with increasing frequency. To insure the greatest returns on this increased investment is just as important to the farmer as increased production per acre.

The latest advance in this direction is the application of commercial fertilizers to the hay crop, especially to timothy which is our important hay, and not to the grain crops which would follow the hay in any given rotation. And yet it is contrary to all previous American farm practice. Outside of a top dressing of stable manure when it can be had the hay crops must forage for themselves and we never question the resulting yields. The theory of the new practice is simple; moreover it is perfectly reasonable. It is this: By applying commercial fertilizers to timothy which is being cropped two or three years in succession, in a five or six-year rotation with other grains—such as corn, oats and wheat, each one year—we get the benefit of the immediate effect of the fertilizer on the timothy and the residual effect of the fertilizer on the grain crops which follow. In other words, by applying the fertilizer to the grass we get the greatest benefit of the plant food constituents applied and the maximum results on the investment.



TIMOTHY FROM UNFERTILIZED PLOT.

Photos by courtesy of Farm Crops Dept. N. Y. College of Agriculture.

But does it work out in practice! This question is answered by information and data secured from the New York State College of Agriculture, Department of Farm Crops and Practice. The illustrations here used by courtesy of the farm crops department are photographs of two displays showing fertilized and unfertilized timothy tops and roots. Note the contrast between the two photographs. The fertilized and unfertilized timothy were grown on uniform fields under identical conditions of soil and moisture. The difference is due alone to commercial fertilizers.

In the case of the fertilized timothy the hay is taller and stronger, showing more vigorous growth; the leaves are larger and more numerous; the heads are of good length, heavy and uniform; there is an entire absence of all weeds; the hay is of excellent quality; the stubble is thick and heavy and the development of roots is remarkable. These last two factors are important on account of the greater amount of organic matter to be returned to the soil when the sod is plowed under.

The unfertilized display presents almost contrary conditions. The hay is shorter, weaker, and shows less vigorous growth; the leaves are fewer in number and small; the heads are shorter, thinner and of uneven development; many weeds are present, daisies in superabundance, some dock and plantain. The quality of the hay is much inferior. The weaker and thinner stubble and the small root development mean that there is less organic matter to be added to the soil to be changed later into valuable plant food.

The effects of the fertilizer are exactly what we would expect them to be, other conditions being equal. Where fertilizers were applied root development was stimulated, more plant food was furnished to the growing plants, the green growth was increased, the weeds were crowded out and more organic matter was left on and in the ground to be plowed under and later to be used as plant food by the grain crops following. But does it pay to fertilize timothy, and where do the residual effects of the fertilizer on the grain crops enter in? Data furnished below, taken from the chart of the same Cornell exhibit, answers both questions.

A 9-Year Fertilizer Experiment

Timothy, fertilized 1905-6-7:—Value on fertilized plot, $127.86; value on check plot, $50.64. Gain, $77.22. Cost of fertilizer, $39.12. Profit, $38.10.

Corn, Oats, Wheat—not Fertilized 1908-9-10:—Value on fertilized plot, $86.31; value on check plot, $64.15. Profit, $22.16.

Timothy—Fertilized 1911-12-13:—Value on fertilized plot, $109.32; value on check plot, $34.38. Gain, $74.94. Cost of fertilizer, $39.84. Profit, $35.10.

Total Profit (actual) 9 years, $95.36. Estimated profit on grain crops 1914-15-16, due to residual effects of fertilizer applied to the timothy, $25.00. Total estimated profits, $120.36. Investment $78.96. Percent on investment, 150 per cent.

The results shown are from a nine years' fertilizer experiment, with a six years' rotation in which timothy is grown three years and fertilized each year with a commercial fertilizer; then followed by corn, oats and wheat on which no fertilizers are used. The residual effects of the fertilizers applied to the timothy are shown by the yields and profits from the grain crops. When the first-half of the rotation had been completed the profit for the first three years was $38.10, or about 100 percent on the investment. In other words, for every dollar invested about two dollars were returned. For the last

(Concluded on Page 7)

Poultry

MANAGING BROODY HENS

There are a good many ways of breaking up broody hens, but only a few ways of doing this and getting them to lay at once. The best way is by getting them to lay again as soon as possible. As soon as broody hens are discovered remove from the nest and place in a hanging wire-bottom coop in a strange location. Do not allow them to stay on the nest any length of time as it will be harder to break them of this natural desire later.

Have this wire bottom coop in a well-lighted and well-ventilated place. We have found it a good idea to place a male bird with such hens. We feed and water them as we do our laying stock and give an occasional feed of animal food, so as to encourage laying. Make sure they have every thing they need, in the form of fresh water, grit, oyster shell, charcoal and dry mash. Give a regular feeding twice a day of a forcing mash and allow them all the green food they want.

Another method is to have a large yard, with a shelter set up on posts, in the middle. Roosts should be provided in this shelter. We find that this method is even better than the former. Because the shelter is raised from the ground about 2 feet and the roosts are about 1½ feet from the ground, they must either roost on these or sit on the ground. In either case there must be a strong circulation of air around their bodies which aids them to forget their brooding desires. They come thru this method of discipline in better condition than any other we have ever tried. It is necessary that they be well fed so as to insure their laying as soon as possible.

Keep them free from vermin. Go thru all the pens often and remove all broody hens to a place by themselves. We find that the last thing at night is the best time, and all such as are still found on the nest at this time should be taken to the broody coop or yard. Feed them well. Handle them carefully and respect their desires and before long they will have forgotten their brooding instinct and will commence laying again.—F. W. Kazmeier, Ithaca, N. Y.

NATURAL SWARMING OF BEES

It is as natural for bees to swarm as it is for hens to become broody or sheep to have lambs. An abundant secretion of honey and a general prosperity of the colony with combs crowded with bees and brood, are the immediate conditions which incite a colony of bees to swarm. If a colony in prosperous condition be found when the gathering season has fairly opened, with eggs or larvae in partly finished queen cells, a swarm may be expected in a few days should the weather continue favorable. The first one from a given hive usually issues within 24 to 48 hours after the sealing of the first queen cell. In the case of strong colonies this may occur in favored situations in May.

The outward indications immediately preceding swarming are a partial cessation of field work on the part of the colonies that have been industriously gathering, and the clustering or loitering of the workers about the entrances at times when they have usually been engaged in collecting and when other colonies no more populous are at work. Apparently many are waiting the signal to migrate, while some seem not to have caught the spirit, but continue their field work. Suddenly great excitement seizes the workers that happen to be in the hive at the time. They rush forth pell-mell, accompanied by the old queen, and after circling about for some minutes cluster on some neighboring tree or bush near the apiary. It was formerly common to make a noise by beating pans or ringing bells in the belief that this causes the swarm to settle. There is no foundation for such action on the part of the beekeeper. If the bees alight on a small limb that can be spared it can be sawed off and the bees carried back to the hive and thrown on a sheet or hive cover in front of the entrance. If the limb can not be cut, the swarm can be shaken off into a box or basket on a pole and hived. If the bees light on the trunk of a tree or in some inaccessible place they can first be attracted away by a comb, preferably containing unsealed brood. In these manipulations it is not necessary to get all the bees, but if the queen is not with those which are put into the hive the bees will go into the air again and join the cluster.

When a swarm has fairly settled it is best to hive it as soon as possible, lest others coming out may join it, occasioning a loss of queens, and sometimes of bees, or much trouble in separating them. The operation of hiveing may appear very formidable to the novice and attended with great risks, but a little experience will dispel such apprehensions. The bees before swarming usually fill their sacs with honey and are quite peaceable, so that by the use of a little smoke in hiveing there is seldom any difficulty.

It very rarely happens that a swarm fails to cluster before leaving, but it may do so if it has swarmed before and returned to the hive because the queen failed to accompany it. Spraying water on the leaders or advance portion of the swarm from a force pump, firing a gun among them, or throwing the reflection from a mirror on them will disconcert the absconding swarm and nearly always cause the bees to settle, but the remedy must be at hand and applied instantly.

As soon as the swarm is fairly within the new hive the latter should be carried to its permanent stand, and well shaded and ventilated. It is better policy, however, to place the hive containing the first swarm on the stand of the parent colony at once, removing that latter to a new location. The new swarm, having the old queen, with nearly all of the flight bees, will be in prime condition for storing honey, so that supers may be placed on it as soon as it has made a fair start in its new home, that is, on the second or third day after the swarm was hived. If there are uncompleted supers on the parent colony which have been removed, they should be lifted over to the new hive on the second or third day, as the parent colony, having parted with so many of its workers, will not be able to store at once. The new swarm, placed in a clean hive with starters only, will be in shape to store in sections at once and produce the whitest combs and and honey which the source of the yield will permit.

The wide-awake farmer does not wait until his bees have swarmed and are clustered on a tree-top, before he thinks of preparing a hive for them. It will be very easy to manage a dozen or more colonies of bees if everything is set in readiness. For instance, if a swarm issues, it will only be the work of a few minutes to take a hive from the barn and hive the swarm into it, or if a honey flow bursts forth suddenly what satisfaction it will give to know that a few hundred section boxes are on hand, ready to set on the hives at once.—F. G. Herman, Bergen Co., N. J.

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Horticulture

COMMON FLOWERS AS MONEY GETTERS

Many a farm woman, girl, or boy who loves flowers might make of them a source of income, as well as a feature of beauty around the home, by making a few plans in advance. One of the most important plans is for masses of flowers of one kind, no matter how old fasioned they may be. Another point to consider is the amount of care different sorts require, for among busy farm-folk time is money.

What to grow, how to market them, and how to handle them to the best advantage are the three points we shall consider. As to the first the standard perennials which need little care except an annual separating of the roots (resulting in more flowers to sell) are perhaps the best of all for our purposes. Of course, the hardy bulbs like the daffodils and hyacinths come in this class and from the time they are in bloom until the brave little button "mums" bloom after the snow comes, it is possible to have flowers in abundance from the perennial class.

Shrubs, too, will furnish a wealth of blooms and these may be grown as hedges or in corners where they will make the home grounds almost park-like in beauty and, at the same time, keep up the supply of flowers for market use.

Annuals that bloom freely, and bear handling, include the sweet peas, nasturtiums, pansies, asters, and many others. In another class we find the biennials like the sweet William, which give wonderful returns. Of an altogether different type we have the free flowering gladioli and the dahlias. As a last suggestion it may be said that the artichoke patch which furnishes food for the hogs may be made, first of all to furnish many a bunch of glowing golden flowers to send to market.

Finding the market is the next step in the plan and the one who contemplates raising flowers for sale should be arranging for the market before the flowers are ready, sometimes before they are planted. Now and then a city florist is glad to arrange for an almost unlimited supply of a particular flower and, if your garden will permit, this is the easiest of all plans. The husband of one woman who has a market route and delivers vegetables, butter, and eggs to regular customers every Saturday, went to see each housewife on his route and arranged with more than half of them to send flowers every week. Another woman sells all she can take at the counter of a market-house stall, and the owner of the stall sells more garden truck because of the flowers drawing customers.

The florist usually buys by the hundred; the woman who sends hers to the homes by the market wagon arranges them in snug bunches that when separated and shaken loose make two or three, while the woman who sells from the stall keeps them standing in pans of water and sells any number called for, at dozen rates. Now that the rural delivery routes handle the parcel post mail the farm woman may send to the market-stall woman (or to anyone else) allowing a commission for selling, and so save her own time.

Having planned for our market and having our flowers ready we should know how to handle them without waste. Many flowers, and the most beautiful ones, have petals so fragile that handling them without breaking is practically impossible and to make them profitable both grower and buyer must be educated to a knowledge of the the fact that when picked while the color of the petal is just commencing to show they will open to their utmost perfection after being arranged in the vase. When so picked they grow more beautiful each hour until the flowers are fully expanded, and they will remain at this stage much longer than will flowers allowed to open on the plant, in the sunshine. Knowledge of this fact makes the buyers glad to get the half-opened flowers and it allows the grower to send in those that would be wasted before the next market day, for market purposes.

Fleur-de-lis would be absolutely worthless as a market flower unless cut and got to its destination in bud form. Roses, too, give greater satisfaction cut when but litle more than half developed. Gladioli cut when but one or two of the lower flowers are opened give the buyer full value.

Details must be worked out to fit individual conditions but there is no particular time to begin the work. Many flowers may be started yet this spring; seeds of perennials sown by June or July will give rich returns next year; shrubs may be planted either spring or fall; summer flowering bulbs of all sorts may be put into the garden at intervals of a week or two, and the hardy bulbs may be planted out in September.—Eva Ryman Gaillard, Erie County, Pa.

A TINY ASTER BULB WILL DEVELOP INTO A PERFECT FLOWER AFTER BEING CUT.

RASPBERRIES A PROFITABLE CROP

The raspberry, the first of the season's bush fruits, has become a very profitable crop to grow. Certain localities give greater success than others with this crop. There are some sections, too, where the black caps prove quite as successful as the reds, but that is the exception and not the rule. Where the black caps prove the better money maker of the two that is the kind for the farmer to grow, but in most instances I think the reds will be found most profitable.

As to varieties, I have found none so far superior to the Cuthbert. I have tried the Marlboro, the London, Miller and others, but still stick to the Cuthbert as the most reliable. It has its faults, the main one of which is, that it soon loses its bright color after ripening; hence it must be picked frequently. Another fault is that it is a little late for some markets. Aside from all this it is a money maker where there is a market for the fruit.

This crop favors the local grower because it cannot be transported very long distances and still be in good condition for sale; hence competition is not keen. Since the pure-food law went into effect this fruit has gradually risen in price from season to season. Fifteen years ago we thought we were receiving good money if our berries sold for 5 cents per oval pint and they were frequently sold for 3 and 3½ cents. Since manufacturers of fruit juices have been compelled to use pure fruit juices the price has gradually risen until at the present time raspberries bring 11 and 12 cents per oval pint, the lowest price last season being about 8 cents for good berries. Almost any farmer can grow from 5,000 to 8,000 pints per acre and have a market for them that can be reached either by train or wagon. If this appeals to you and you are favorably located, can command pickers when needed, and have the proper soil, there need be no fear of trying to grow raspberries.

In giving cultural directions, let it be understood that we refer more generally to the red varieties, particularly to the Cuthbert. I do not like old or last season's plants. I prefer the young sucker plant. The plant of the current year's growth is best. In digging these plants they must have a piece of the cross-root attached. The plant comes from a root running along a few inches under the surface and a piece of this root must be attached to the plant root making it look like the letter "T" when inverted.

Have a piece of land prepared as for any farm crop, and mark off in rows 7½ to 8 feet apart. If soil is strong 8 feet is none too far. A clay loam is the ideal soil and that so situated it will not be wet and also never suffer unduly from drouth. A very hot dry spell when the crop is ripening is very apt to do considerable damage. I have known crops to be cut in half where plantations were set on light sandy soils. After marking off the right distance with a one-horse turning plow, set plants in furrow about 30 inches apart. Use no fertilizers in row at time of planting but side-dress with a good high grade potato fertilizer as soon as plants begin to grow. Keep clean by frequent cultivation and hand hoeings all season.

A row of some low growing crop like potatoes can be planted between each row of berries the first season. Early the following spring, trim back from one-quarter to one-third of the wood growth; after trimming take half the canes in each hand (there will be about four) and tie a single or half knot with them. This helps hold them off the ground the first bearing year. After the first season they will be sufficiently strong to support themselves. When the young canes are 3 feet high top them, as this helps them to grow more stout. Every spring the dead wood must be taken out and vines trimmed to a uniform height. As soon as this is done a shallow plowing from the row is given. After giving them a good hand-hoeing side-dress with good high grade fertilizer as recommended for first year. Work the soil fine and plow back. Cultivate until picking time to keep weeds down and conserve moisture. A raspberry plantation will last from seven to nine years and if on the right soil should yield 5,000 to 8,000 pints per acre annually.—C. C. Hulsart, Monmouth County, N. J.

COMBATTING PLUM CURCULIO

All peach growers in the East are familiar with the "worm" in the peach, the larva or grub of the so-called plum curculio, or "little Turk." One of the best and perhaps most generally practiced preventive measures at the present time is the so-called jarring method. Its value depends on the fact that a sudden jar of the tree will cause the beetles to fold their legs and fall to the ground, feigning death as a means of escaping detection. Advantage is taken of this habit to collect the beetles on sheets held, or placed on the ground, under the trees. Jarring is begun in the spring as soon as the fruit is well set, and should be done preferably in the early morning or late evening, when the insects are somewhat torpid with cold and drop quickly. In large orchards it is often necessary to work during midday, tho not so many beetles are caught as they cling to the tree more tenaciously and after falling escape more quickly. During seasons when the beetles are numerous, it is best to jar the trees every day for a period of four or five weeks, until it is observed that but few beetles are being caught.

Various forms of curculio catchers have been devised, but perhaps the simplest and most suitable for work on a small scale, consists of a sheet some 12 feet square, made by sewing together strips of heavy muslin, the central seam being left open to the middle of the sheet. The canvas is placed on the ground under the tree, being centered by passing the midseam around the trunk and one margin along the seam being overlapped to entirely cover the ground. A padded pole for jarring the tree completes the outfit.

In jarring on a larger scale the work must be done more expeditiously. A form of catcher much in use in extensive eastern orchards consists of a cart on which is carried an inverted umbrella-shaped canvas on a folding frame, with an opening in front to receive the trunk of the tree. In operation the cart is pushed under the tree, which is given a sudden jar by means of a padded bumper at the base of the slit, or preferably with a padded pole. The beetles falling on the hopper-like canvas are brushed down thru the opening in the bottom into a can of kerosene fastened beneath.

In the control of the curculio, clean culture is of great importance as removing conditions favorable to insect multiplication, according to the Department of Agriculture. The numerous plum thickets to be observed in the neighborhood of orchards and along roads, particularly in the South, are constant sources of infestation of orchards, and should be destroyed wherever possible. In fighting the curculio best results will come from a combination of two or more of the several methods recommended and uniformity of action by all the orchardists of a community will bring about a great reduction of loss from this pest in that section.—Department of Agriculture Press Bulletin.

CONTROL OF CABBAGE CLUB ROOT

Each year the question of the control of club root in cabbage receives consideration and letters are already beginning to come in asking for possible methods of control of this disease.

For those whose soil is not already infected with the germ of this disease we can only advise extra precaution in avoiding it. First make sure that no plants are purchased which have been grown on affected soil. It seems that this is the most common way in which this disease is carried. Claims have been made that it is carried on seed to some extent, but these claims are not substantiated, and it is questionable if there is any great amount of danger in this direction. Then, in arranging the seed bed, make sure that that is put on a clean piece of ground.

The State Experiment Station of New York calls attention to the fact that in an effort to put the seed bed on absolutely clean ground, hedge-rows and other heretofore unused ground is often plowed up for this purpose. The results in the majority of cases are very disastrous, as club root occurs on many plants that have been allowed to grow along hedge-rows and woods and therefore these pieces of ground are more often inoculated with disease germs than in the open field, which has been carefully cultivated and weeds kept under control.

Those who have ground not infected with this disease are confronted with an entirely different problem. We have no data at hand showing the length of life of these germs in the soil even when no cabbage crop is grown on the land. It is a well known fact, however, that a heavy application of lime will reduce by a very large percentage the amount of damage done by club root and it seems that burnt lime is much the better form to use in this case. All authorities seem to agree that very little advantage can be gained in the control of club root by the application of lime during the same season in which one wishes to grow a crop of cabbage. It should be applied at least one year before. If cabbage, for instance, is to follow corn the lime should be put on after the land is plowed for corn and thoroly harrowed in. If the ground is plowed for corn the fall before, so much the better, thus giving a heavy application of quick lime a year to eighteen months to work upon the soil before the cabbage is seeded.

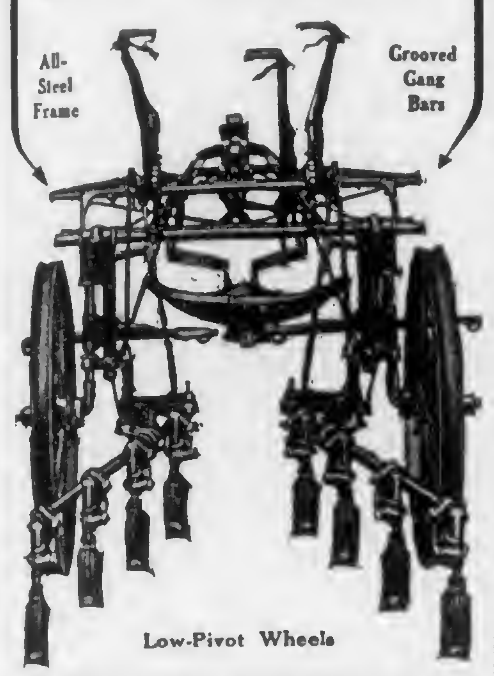
A heavy application of lime, say 1,500 to 2,000 pounds per acre, followed by a seeding of alfalfa allowed to stand for three or four years, is probably the best recommendation that can be given in ridding a field of club root.—F. R. Stevens, Agriculturist Lehigh Valley Railroad.

ORCHARD PLANTING DISTANCES

When I first planted an orchard the popular planting distance for apples was 30 feet each way so I planted mine that distance, about 8 acres in all. Naturally many people wondered why I planted so far apart. Later on I bought 60 pear trees and planted them between the rows one way, thus making the trees 15 by 30 feet.

I have grown many good crops of apples and pears, but now find the trees entirely too close, even where there are no pear trees, as the trees or branches nearly all come together and many limbs interlock. Before long the pear trees and every other apple tree will have to come out. As a rule farmers plant trees too close. When a young orchard is planted 40 by 40 feet, fillers may be used until the apple trees bear, when the fillers may be cut out.

The safest way is to plant apples by themselves; and peaches likewise. Pears, with the exception of Kieffer, Bartlett and Clapp's Favorite, cherries and plums may be mixed more or less, as they are rather short-lived.—Joseph E. Fischler, Tioga Co., Pa.



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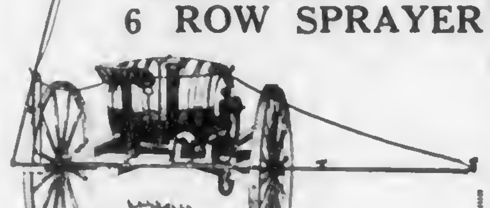

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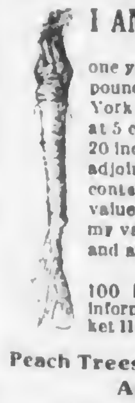

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The Dairy

WITH CHARLES SWEIGART, CHESTER COUNTY, PENNA.

(Continued from page one)

age and general development, and birds of a class are housed together in their separate compartments until all are fully developed when all on that floor are thrown together. Here the layers are kept thruout the season from September 1 until they are either sold or transferred to the breeding flock the following season. The standard laying ration consists of a mash of 2 parts bran, 1½ ground oats, 1 middlings, 1 corn meal, 1 gluten, 1 oil meal, and 1 beef scraps. This mash is fed moist with a mixture of steamed clover and cooked vegetables, during the afternoon. This is followed an hour later by grain in the litter an a basis of about 7 quarts to 100 hens. This ration, however, is varied according to the condition and production of the birds.

The floors are kept heavily bedded with clean straw and the litter is not removed until spring. All roost droppings are cleaned weekly. The hens feed from troughs, with grit, shells, etc., available at all times in self-feeding devices. The roosts, which are all on one level on each floor, with a dropping board beneath, are kept carefully white-washed and disinfected, and little difficulty has been encountered with insects. We anticipate a protest from some readers against the practice of permitting the litter to accumulate thru the winter, but Mr. Sweigart has had no difficulties with the practice and he has a uniformly vigorous and healthy flock and a balance sheet on sales of eggs that speak for themselves. Record sheets are posted on the wall of each compartment and a careful record is kept of each day's production from each lot.

As roosters are never permitted in the laying house and all layers being purebred White Leghorns, especially selected for uniformity in size and color of eggs, the product is acceptable in the fancy white, sterile-egg trade. All eggs are shipped to a New York firm that caters to a special fancy trade. This market is open to all eggs of this kind that can be produced; there are no gluts in the market of this particular class of eggs. These hens are not only winter layers. Mr. Sweigart observed incidentally that a flock of 380 hens turned him just about $40 a week during the past summer, and of that amount practically $25 was net profit.

We have said that careful records are kept of all production. Following is a complete record of the poultry department for the year and the egg record for 11 months ending November 1, 1913. It will be observed that each account is kept separate to get at actual costs and profits of each department. Thus, complete accounts are kept for layers, chicks in the brooder house up to seven weeks of age, the broilers and the pullets. These accounts are itemized as follows:

Poultry Record—Ivywood Farm

From November 1, 1912 to November 1, 1913

Nov. 1, 1912, 380 layers on hand, value $380.

Laying Flock.—October 1, 1913, eleven months' eggs, 46,255, bringing $1,013.66. Cost of feeds for layers, $102.67. Cost of labor on layers, $75. Total cost $177.67. Profit on layers, $535.99.

Raising Chicks to Seven Weeks of Age.—Eggs set, 3,505; Market value, $68.94. Oil for incubating $5. Labor for incubating, $24. (2,468 chicks hatched and 1,857 raised). Cost of labor on chicks to 7 weeks of age, $56.25. Cost of feed for 1,857 chicks raised to 7 weeks, $99. Total cost of chicks to 7 weeks of age, $253.19.

Raising Chicks and Broilers.—(877 cockerels fattened as broilers) Cost of feed from 7 weeks of age to marketing, $14.48. Cost of labor on fattening broilers, $2. (980 pullets raised for layers) Cost of feed for pullets from 7 weeks of age to November 1, 1913, $169.48. (about 60 pullets were stolen from range). Cost of labor on pullets $15. Total cost on broilers and pullets from 7 weeks of age, $200.96.

Total cost layers, chicks, broilers and pullets, $834.15.

Receipts.—Profit on 380 layers, $535.99; 877 broilers sold, dressed, $234.04; 350 pullets sold as layers, $350; 260 hens sold, $198; 100 hens on hand for breeders, $100; 571 pullets on hand for layers, 571. Total receipts $1,989.03. Profit 1913 ($1,989.03 - $834.15) $1,154.88.

In the 11 months the layers returned an average of $2.66 on eggs sold. Feed and labor per hen averaged $1.25, leaving an average profit per hen of $1.41. The 3,505 eggs set hatched 70.2 percent. The chicks cost 4 cents each when entering the brooders. A total of 1,857 or 75 percent, was raised. At the age of 7 weeks and 2 days, when leaving the brooders, the average cost per chick was 13 2-3 cents. The average cost of broilers when sold was 15 3-5 cents each. The average cost of pullets on November 1, 1913, when five months old, was 32 cents each.

"A SILO FOR SUMMER FEEDING SHOULD BE A PART OF THE EQUIPMENT OF EVERY FARM WHERE STOCK IS KEPT"

Mr. Sweigart says that this record is not what it should be, or what he hopes to make it. Many of his layers were too old for large profits and his losses in the brooder house were at least 10 percent heavier than necessary with more experience in handling it. He expects to bring his 1914 chicks to maturity with less than a 15 percent loss. His present laying stock is of the right age to make better profits and he had them primed for an average profit of $2 each for the season of 1914. He reports that their performance during the past winter months indicate that they are ashamed of last year's figures, and they are out for a record this year. A complete record for the season 1914, and we hope for many years to come, will be published in these columns.

The Dairy.—We have said that the general farm plan embraces a combination of dairying with poultry. The dairy department has not progressed as far as the poultry work but is proving a splendid adjunct in providing cheap poultry feed in the form of skim milk. The present herd consists of 15 head of purebred Holsteins, with a purebred sire, King Pietertje Walker Clothilde, a son of King of the Black and Whites, at the head. This sire was purchased last fall, in partnership with Mr. P. M. Hicks, a neighbor.

Mr. Sweigart plans to increase his herd with purebreds until it numbers 30 head. Maintaining that number of cows on 30 acres of land is a fair indication of the intensive methods practiced on this place. It is this vigorous management in making every asset of the farm yield a maximum of highest quality marketable products that is spelling success. All milk is sold to a local creamery, a large quantity of skim milk being brought back for feeding to the poultry flock. The average production of milk last year was about 8,400 pounds per cow.

The past ten years have been strenuous ones on this farm, in which labor union hours have seldom been observed. But Mr. Sweigart is still a young man and the business he has established is full of promise for the future. Some will say that he could have done better in a city position; that such energy and persistance would win larger rewards in fields of greater opportunities. Perhaps so, but he loves the farm and its environments, and this means more in the development of a life work than mere money. In working out his individual problem and building success from a meager start and with no outside help, he has given us an object lesson worthy of careful study by every ambitious boy. Moreover, he has demonstrated that in farming, as in other lines of business, the man is at least 90 percent of the job.—Arthur J. Anderson.

SOILING CROPS VS. SILAGE IN SUMMER

The relative economy of depending upon soiling crops or silage to supplement short pastures in summer is a question of importance to every dairyman. The Wisconsin Experiment Station has made a careful study of these two systems of providing summer feed, and presents some interesting information on the subject in Bulletin 235. By feeding one lot of cows in the University dairy herd soiling crops and another corn silage for three successive summers, it was found that corn silage can be used to better advantage in supplementing poor pastures and in keeping up a uniform and economical flow of milk. By the use of silage cows were kept in better condition to enter the fall and winter, and the annual profits for the year were greater.

The soiling crops grown during the three trial seasons consisted of red clover, peas and oats, green flint corn, sweet corn, and a mixture of oats, peas and dent corn. A careful record was kept of the time of sowing, amount sown, the time of cutting and the yield per acre of green material, protein and green matter. Clover proved the least palatable of the green crops fed. Sweet corn was substituted and proved highly satisfactory. When fed corn, the cows did better than when fed oats, peas and other soiling crops. The silage used was made from local strains of white and yellow dent corn.

The records of milk production for the two groupes differed very little. For the three years the cows fed soiling crops produced 195.7 pounds more milk than the silage-fed cows, but 40 pounds more solids and 35.84 pounds more butter fat were produced by the silage-fed cows. The silage-fed group received 1,740 pounds more dry matter than did the soiling crops lot, but the soiling crops cows consumed 420 pounds more protein during the trial than did the silage-fed cows. Less labor and seed was required in the production and feeding of silage than soiling crops. The same amount of cultivation was needed for both. While thickly seeded crops are more easily planted, greater ease was found in harvesting silage.

The cows were fed according to condition of pasture, the size of the cow, the stage of her lactation and her milk production. On an average the silage lot received about 30 pounds and the cows fed soiling crops 35 pounds per head daily. Each cow, in addition, received from one-fourth to one-third as many pounds of grain daily as she produced pounds of milk. This is the practice at the Wisconsin University except during the early summer, and is done to prevent loss of milk flow and body weight.

A silo for summer feeding, of smaller diameter than the average silo, should be part of the equipment of every farm where live stock is maintained. With a herd of 20 or more cows the advantages are greater. Summer feeding of dairy cattle requires care, uniformity and liberality if the production of the herd is to be maintained at normal during the period of scant pastures and dry weather. Hay and grain rations in addition to plenty of silage or soiling crops should be fed unless an abundance of good pasture is available. When rainfall is below normal and pastures are poor, the soiling crops are likewise apt to fail. The use of the silo tends to equalize the quantity of feed available from year to year, and hence insures against losses in production.

NEW JERSEY MILK LAW

Governor Fielder has affixed his signature to Senate Bill No. 182, by Dr. Ramsay, of Middlesex county, regulating the production, distribution and sale of milk and cream. This law, which had the backing of the state board of health, provides that any local board of health may pass ordinances for licensing and regulating of all persons engaged either as principals or agents in the production and sale of milk and cream, and may fix an annual license fee for the same not to exceed $2. Such ordinances may require the producer or seller of milk and cream, to set forth the locality from which they are obtained, and in case the place of supply be changed the local health board must be notified.

The law further provides that local boards of health may also ordain that no license shall be granted to sell milk from unclean or unsanitary dairies, or from cows fed on swill, or that are diseased. Every dairy must be properly ventilated and have a pure water supply. Another provision is that every proprietor of a dairy must file annually with the state board of health a certificate signed by a duly licensed veterinary surgeon, stating that the cows have passed a physical examination and are in a healthy condition. The State board of health is given power to assist local boards of health in enforcing the law.—H.

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FERTILIZING TIMOTHY

(Continued from page two)

half of the rotation in the case of the three grain crops the value of the yields of the unfertilized grain, grown on the plots previously grown to timothy and fertilized, over and above the value of the yields on the check plots on which no fertilizer had been used was $22.16, which is all profit; but this profit must be added to the profit on the timothy during the first three years of the experiment because it is all due to the effects of the same set of fertilizers.

This makes a total profit of $60.26 on an investment of $39.20, or 154 percent. This may be stated by saying that for every dollar invested $2.54 was returned. For the last three years the profits on the timothy were $35.10, or about 90 percent on the investment, which means again that for every dollar invested in fertilizers $1.90 was returned. No results, of course, have been secured for the next three years but the estimates seem reasonable and would not be much different from the results for the first complete rotation given above. For the twelve years, or two rotations, about $2.50 will be returned for every dollar invested.

We can find no experimental data or other evidence to show the results where fertilizers have been used in a smaller rotation on the corn, oats and wheat instead of the hay, but from farm practice and farm experience there seems no reason to expect such results and profits. Where a complete fertilizer is used on the grain crops, as 3-8-5 for wheat or 4-9-6 for corn, for which grains more phosphoric acid and potash than nitrogen is used in the formula, the nitrogen which is chiefly required by the timothy, applied the first two or three years of the rotation, has probably been lost before the grass is ready to use it, and no organic matter of consequence has been added by the grain crops from which available nitrogen can later be obtained. Residues of phosphoric acid and potash are of rather insignificant importance because there is perhaps a very great deficiency of these elements in the soil for a good yield of timothy hay which would follow in the rotation and the expensive nitrogen would have to be added again.

Where a complete commercial fertilizer, say a 9-4-7, which is high in nitrogen and high in potash but low in acid phosphate, is added to timothy the nitrogen is used at once by the grass crop and the residue of phosphoric acid and potash accumulate in the soil until demanded by the grain crops which follow. In the meantime sufficient stubble and roots have developed and returned to the soil to supply nearly all the nitrogen that is needed by these same grain crops. As a result we get the immediate effect of the fertilizer on the timothy and their residual effects on the grain crops which follow in the remainder of the rotation. Thus the theory of timothy versus grain fertilization seems reasonable and the evidence seems conclusive as to its value in crop rotation.—John H. Reisner, Cornell University.

Revenue From Condemned Cattle.—That there has been a marked increase in revenue from the sale of cattle condemned and sold under direction of New York department of agriculture is evident from a recent report which shows an increase of more than 86 percent over the return under the previous administration. The average return from five abattoirs for the year ending April 1, 1914 is $26.40 per animal whereas for the period from April 1, 1911 to April 1, 1912, it was $11.14. Until commissioner Huson assumed office there was no revenue to the state for animals that were rejected and destroyed but under the new plan the state receives 75 cents per hundred pounds for the carcasses of such animals. The hides also bring from $4.50 to $5.50 each.

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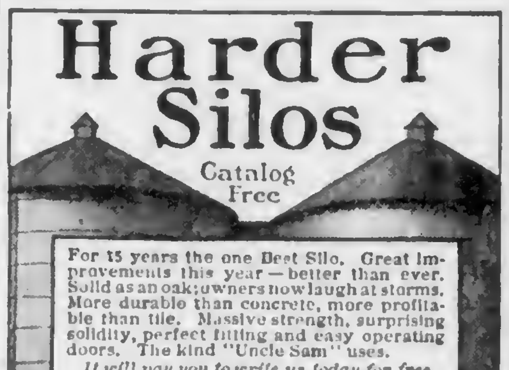

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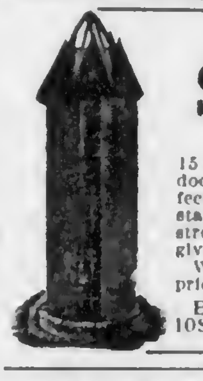

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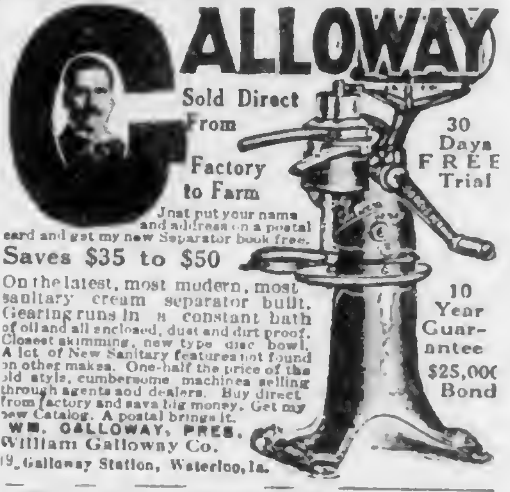

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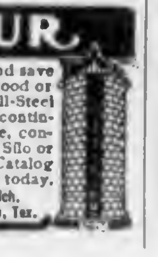

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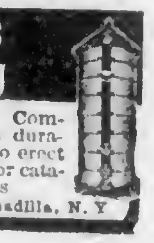

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Live Stock

THE BEGINNER IN PUREBREDS

A few years ago a business man, who was interested in the board of trade dealing in a small way, made this remark to the writer that a man ought never to put more money into anything of doubtful profit than he can afford to lose. I have thought that advice would apply to many other lines of business besides board of trade speculating, and particularly to the beginner in the purebred stock and poultry business. Somebody has said, "Experience is a dear teacher," and it usually is. It looks strange to me to see men investing headlong all they have and borrowing money besides in business that they know absolutely nothing about.

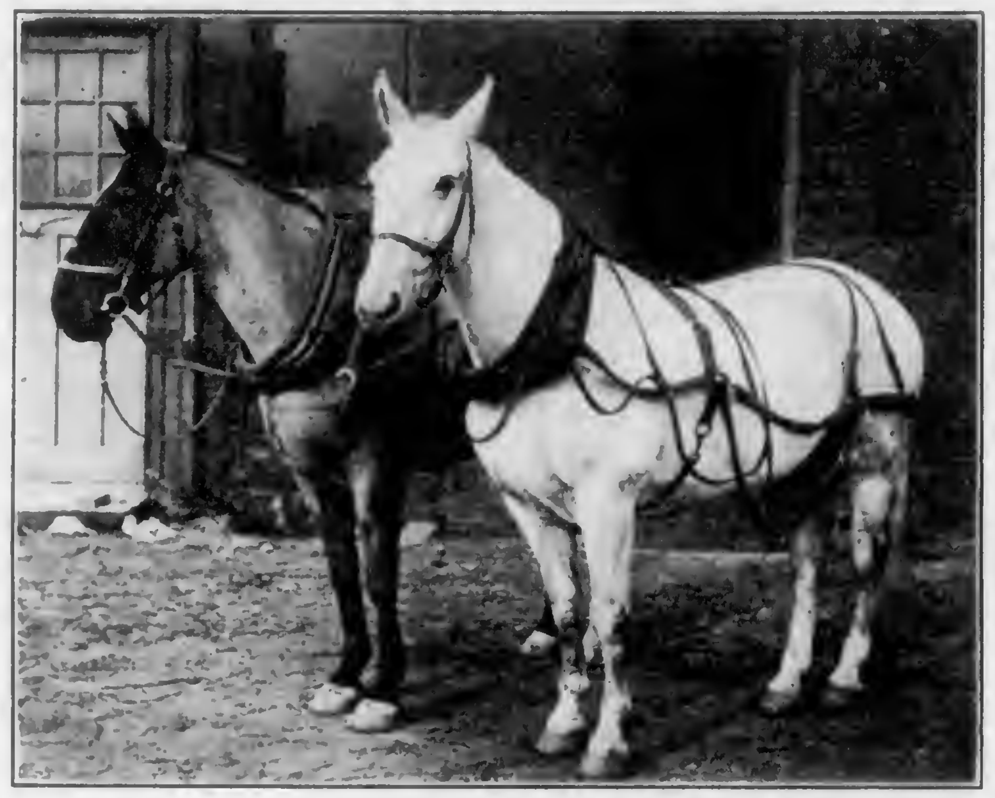
There are crooks and turns and ups and downs in every trade that nobody can become familiar with except by experience, and the purebred live stock and poultry business is no exception to the rule. The mistake too often made is to undertake to accomplish in a year or two what it has taken the follow we are trying to imitate half of his life to do. I have known fellows to buy up a lot of high-priced cattle, hogs, or sheep, then run an advertisement in two or three papers and imagine their fortunes made. I know some fellows who would not think of paying less than three to five dollars for a setting of eggs. As a general thing they pay dearly for their experience, and those who deal with them usually do the same.

To my mind there is a better way: Go slow—it is not nearly so expensive. Now I would not advocate the idea of buying anything that may be offered just because it is cheap or represented to be purebred, but I do happen to know that it is possible to buy real good stuff at a fair price by looking around a little—stuff that will do to practice on at least. In the stock business as in other lines we often pay according to the reputation of the breeder, and too often do not get any better stuff than could be bought of some less pretentious fellow. There are many breeders the country over, who have first-class stock to sell, who need money and rather than run the risk of carrying their stuff over will sell at little above market price. In several years of buying purebred stuff I have gotten good bargains of the medium priced men. Of course it is slower getting a start; we can not have a hundred pigs or five hundred chickens for sale at fancy prices in a few months, but by the time we know what is fit to sell as purebred and what is not we can generally have enough stock or eggs to supply our trade and in the meantime sell enough close home to pay expenses and then some, besides our schooling.

Better sell half a dozen first-class pigs and fatten the rest than to sell half a hundred with four out of every five culls. I want to repeat that the growing and selling of purebred live stock and poultry is a business that has to be learned, and the wise thing to do is not to make our learning too costly.

If we pay $25 for a young sow we could not lose anything if she raised only four or five pigs the first time. If we pay $60 we can not afford to have much bad luck. Now, the chances are that the cheaper hog will be as profitable to learn with as the dearer one. Another place the beginner can spend a lot of money and get little return is at the county fairs. I have found that animals that are fitted for the show ring are not the kind for the little fellow to buy. They look nice but they are not "utility" animals, and more than that, they are worth more for show purposes than for breeding. Now I do not object to showing stuff at the fairs but I never thought it paid the beginner to buy that kind. Another thing, if we start in easy and it does not pay and if for any reason we want to quit that particular breed of animals, we can turn the whole outfit into the fattening pen and come out whole with a little profit besides. Whereas if we had paid from $200 to $500 f r breeding animals there would not be much profit in it.

The scrub colt, pig or sheep and the old-fashioned hen of many colors have had their day. The purebred has become a fixture and there is a way of getting started whereby we do not have to put more money into the business than we can afford to lose; but we don't need to lose anything.—C. S., Crawford Co., Pa.



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Hog Cholera.—This is the title of bulletin No. 173 of the Indiana Experiment Station at Lafayette, Indiana, which has for its purpose "to inform farmers as to the nature of hog cholera and the methods of controlling this disease." It embraces a discussion of causes, symptoms and preventive measures in connection with the disease and takes up hog cholera serum and methods of vaccination.

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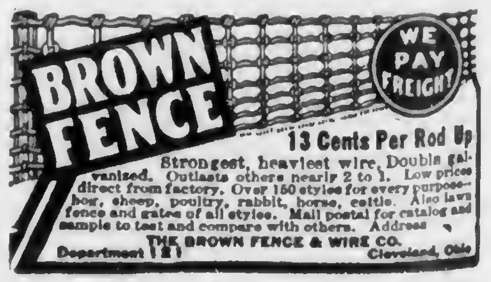

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Grange

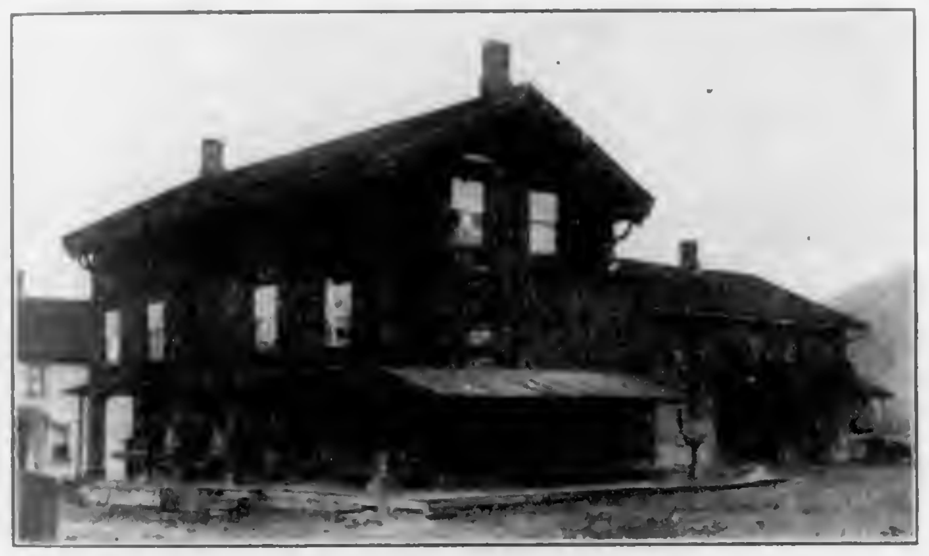
A STIRRING GRANGE CONTEST

A Busy Winter And A Rich Harvest

Sheshequin Grange No. 1363 was born December 23, 1907 with 21 charter members; Deputy Asa Stevens of Powell, Pa., being the officiating Godfather. The membership was so small that it was thought advisable not to build a hall. Accordingly meetings were held in the town hall and subsequently in the I. O. O. F. Hall, but these arrangements not proving satisfactory the grange met every two weeks at the homes of the different members until about three years ago when a school house, centrally located, was purchased from the school board; it being no longer used for school purposes. This was a very satisfactory plan and the growth of the grange has been steady from that time on, the secretary reporting 63 members at the last quarter in 1913.

L. C. BURROUGHS,
Master of Sheshequin Grange No. 1363.

At the beginning of 1914, L. C. Burroughs, a member who had just moved into the place from Towanda Valley Grange, was elected Master. As there were no sheds to accommodate the horses at the school house, and as a stormy night meant a very small attendance, it was thought best to make an effort to raise money to build sheds in the fall. Mr. Burroughs proposed a membership contest which was agreed to by all present. It was entered into and the results were far greater than any one dreamed of.



SHESHEQUIN GRANGE HALL. FORMERLY "THE VALLEY HOUSE."

Bro. D. W. Chaffee and Sister Lucy Lent were selected to lead the sides, and the members were divided into two parts, each leader choosing alternately as in the old fashioned spelling match. Every one whose name was on the roll was chosen even tho they were in arrears or out of town. Every new male member counted ten points in the final score and every new female member counted five points, and every member present at a regular meeting counted two. The side that had the least number of points at Easter was to put up a supper to the winners.

MRS. LUCY LENT,
The Defeated But Not Vanquished Leader.

D. W. CHAFFEE,
Leader of the "Reds" and Winner of Contest.

The members went to work and they certainly did well, as the names came in by the score. One night 34 were given the first two degrees; and 20 was a small class. To make a long story short, the contest closed with 119 new members, Sister Lent having brought in 22 males and 24 females while her opponent, Chaffee, had 36 males and 27 females, which, with the counts for attendance, made the final score: Lent, 1,088; Chaffee, 1,187.

After the contest had been running but a month it became evident that something radical must be done, as the little school-house-hall would soon be too small. Fortunately Bro. Chaffee originated a scheme to buy the Old Valley House, an old hotel which had been a land mark for years. The accompanying illustration shows it as it appeared when purchased. Repairs have been made and a handsome sign 16 feet long bearing the legend "Sheshequin Grange No. 1363" has been placed just above the windows.

This hotel contains 15 bed rooms in the back part, besides a kitchen, a large dining room and a parlor, which are rented to a family for $48 per year; and as our grange meets on Tuesday night we rent the barn which accommodates 24 horses to the Odd Fellows on Saturday night for $12 per year. It will be seen that our hall is thus a source of income. The front part of the hall is three stories high and contains the old bar room, which we now use as a grocery, a parlor and a hall. The second story is the old ball room, which is our present lodge room, comfortably seating an ordinary grange but now taxed to its full capacity. The third floor was used as a lodge room years ago but is now vacant. We hope some day to tear out the third floor and make one much better ventilated room out of the second and third stories.

Bro. Chaffee's scheme to buy this building met with the hearty approval of every member, and the old hall was sold and the new one bought, the first meeting being held in the new hall February 24, 1914. The long looked for feast came April 14, and was an event long to be remembered; 180 people being served with supper. The first table was served at 8 o'clock and at 10 the program began. After a few remarks by the leaders of both sides in the contest, Sister Georgia Piolett, State Pomona, read a paper on "The grange and what it stands for." Bro. A. M. Cornell, a past State Lecturer followed with a very interesting address.

In speaking of the contest, Bro. Burroughs said: "We were fortunate in securing two leaders who are very enthusiastic Patrons and who can beat or be beaten with the same grace. Most contests bring in undesirable members but we have been very fortunate in this respect. This is the second contest of the kind that I have managed, and if I were to manage another one I would make this change: Every 10 cents brought into the treasury would count one point. This would give each male member 30 points; each female, 10 points; a boy 10 points; a girl 5 points and a reinstatement 12 points. Each person attending should count 2 points."

Do not think that we have done nothing but hold this contest. We have bought about $800 worth of sugar, grass seed and other things, and have saved considerable to our members. Neither have we stopped working, for there are three applications in the secretary's hands for action at our next meeting night. We now have some of the finest timber to work with in the world. We have an orchestra of seven pieces and another one of four, besides a number of speakers, violinists, clarionetists and cornet players. We feel that the end is not yet and that great things are in store for us. We have a cow-testing association well under way, a boy's corn-growing club and a committee to arrange for a library. A picnic committee is planning to unite the five nearest granges with ours at a date in August, at which time we will be glad to see any or all of you.—An Onlooker, Bradford Co., Pa.

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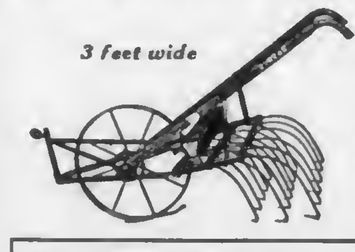

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Philadelphia, Pa., May 9, 1914.

Colorado Strike While all the country has been stirred by the threatened war with Mexico, the struggle between striking miners and the mine owners in Colorado has resulted in greater bloodshed and more serious warfare than the engagements at Vera Cruz. The Colorado strike has continued with ever-increasing bitterness between the strikers and mine guards for the past six months. The state militia has apparently failed to stop hostilities, inasmuch as their efforts to protect property have been construed by the strikers as an effort to help the mine owners. The recent engagements have been fought with all of the intensity of actual warfare. They were not mere strike riots or street fights, but both sides were firmly intrenched and shot to kill. The loss in one recent battle was reported 45 dead and 20 wounded; many being women and children. President Wilson responded to the call for help last week and dispatched federal troops to stop the fighting. The causes of this war are similar to those which existed in the mining war in West Virginia last year and have existed in every great labor strike in recent years. The mine owners claim that the strike hinges upon the right of free men to labor for and with whom they please, and the right of employers to hire whom they please. The strikers claim that it is a question of the right of labor to organize. In pressing their side, the mine owners have pleased to hire none but non-union men, and the specific issue is the question of recognition of the union. Capital is permitted to organize. Mine owners have developed a combination of forces. Having money invested and ''property'' developed, they can call upon the state to provide protection of such property. The laboring man's capital is his capacity to labor. When he seeks to enhance the value of that capital by combining his labor capacity with that of his fellows, his union, thus formed, meets the strength of the combined employers. But the laborer has little or no property established, and the state can offer no protection for that which he does no have. The unions see an injustice in this discrimination and assuming the right to make a real contest they seize upon the available means of warfare and destroy the property of the employers and those who seek to protect that property. The struggle in Colorado is merely a repetition of the struggle at Homestead and the struggle of every labor strike since labor unions were established. Such strikes and industrial wars will undoubtedly continue until the status of the unions and the rights of labor as opposed to capital are definitely defined by federal law.

Farm Clubs A recent letter from a man prominent in agricultural work in the Northwest, in reference to farming conditions there says: ''There is a very strong tendency toward co-operative buying and selling, resulting from the organization of over 1,000 farmers' clubs in the past two years. These farmers' clubs were started, to a large extent, by the county agent movement with the idea of forming a channel thru which the county agents could come in touch with their clients, the farmers, but as soon as these farmers get together in clubs they immediately turn to co-operative marketing and buying. A second change which has been greatly hastened by the county agent and farmers' club movement is the introduction of corn, alfalfa and live stock in place of the single crop method of farming.'' Such co-operative work is the first result where farmers are brought into any sort of organization or close association. Many see the greatest possibilities for good in the county agent movement in such organization work. But counties should not expect their farm bureau men to do their organizing for them or to direct their co-operative work. The agents may bring the farmers of a county closer together and point out lines of common interest in which the farmers may well join in co-operative effort, but it must remain for the farmers themselves to push co-operation in buying and selling and in all lines in which such effort is practical and profitable. There is as much need for such work in the East as in the Northwest.

MARKET BY PARCEL POST

Philadelphia is not one of the cities designated by the Post Office Department to inaugurate a system of direct marketing by parcel post. However the Bureau of City Property of the city government is ready to undertake a similar development of direct marketing for this city. This Bureau will receive names and addresses of farmers who are in position to mail farm produce direct to city consumers. Applicants should state the kind and amount of produce which can be sent each week. The Bureau officials will then attempt to put such applicants in touch with city consumers who can take a stated amount of such produce each week, and thus open a way for direct transit of produce from producer to consumer. Address Bureau of City Property, City Hall, Philadelphia, Pa.

NEW HEAD OF HORTICUTURAL DEPARTMENT AT PENNSYLVANIA STATE COLLEGE

Professor Maurice G. Kains, for ten years associate editor of the American Agriculturist, has been appointed Professor of Horticulture at The Pennsylvania State College and will report for service August 1.

Professor Kains graduated from the Michigan Agricultural College in 1895; he spent the following two years at Cornell University, pursuing post-graduate work, and obtained at that institution the degree of Master of Science. He served three years in conducting special crops investigation for the U. S. Department of Agriculture. During this period he made a thoro study of special crop problems along the Atlantic Seaboard, and also made several trips to Bermuda to investigate problems which were being studied by the United States Government. In 1900 he accepted the Chair of Horticulture at the School of Agriculture and Horticulture at Briarcliff Manor, New York. After two years of teaching, he became horticultural, agricultural, and bontanical editor of the New International Encyclopedia, and later chief horticultural contributor to the Cyclopedia Americana.

Professor Kains' ability as a teacher, speaker, investigator and editor, together with his knowledge of eastern conditions and his acquaintance with eastern horticulturists, make him unusually well qualified to head the Department of Horticulture at The Pennsylvania State College.

PROFESSOR M. G. KAINS,
New Head of Horticultural Department at State College.

Editor's Note.—I want to add a word to this general announcement from knowledge of Professor Kains gained thru several years of personal and business acquaintance. He comes well qualified to care for the executive, technical and practical needs of the Horticultural Department. As a teacher and leader of young men he is a man of exceptional qualities. Closely sympathetic with the problems of student life and with a broad conception of the essential things in the development of character, he is especially qualified to assume the higher responsibilities of a leader of men. The students of State College will find in Professor Kains not only a capable teacher, but a wise counselor and an understanding friend. The institution and the state is to be congratulated upon securing the services of a man so keenly sensible of the responsibilities of his new position and so capable of meeting them.—Arthur J. Anderson.

THE PENNSYLVANIA TOWNSHIP ROAD LAW

The article on this subject in Pennsylvania Farmer of April 25, makes statements that need correction. It opposes the position of the grange upon vital phases of the road question. Dr. McCaskey is a good granger and has been heartily with us in our road fight all thru. He has authorized me to say that he does not seek to oppose the grange policy but wrote the article on the strength of several good points in the bill itself without reference to the place the 1913 Dirt Road bill held in the general policy of road legislation in this state.

In order to get the status of this law clearly in mind let us go back a little in the history of road legislation and note the several steps that have been taken by which the Grange has reached her present position upon this subject. The grange at one time was willing to stand for some state roads, while realizing that all roads were largely local in respect to amount of travel, yet they felt that certain roads would naturally need more care on account of the extra usage and that the state ought to be the proper agent to do this work. Experience has taught us an expensive lesson with regard to doing work thru a central state department, not only in our state but in the others that have tried the plan.

We have for years been convinced that this work must be done under a system similar to our school system where the authority is placed where the work is done. All our dirt road laws, up to this last one, allowed this local authority and the money appropriated by the state was paid to the townships. However, the plan was a failure because the state repudiated the debt and paid only a small fraction of the amount pledged. By this time the newly established highway department had shown conclusively that it could see no roads but the so-called permanent roads, and these were handled in such a way as to convince nearly every one that centralized road-building from a far-away state department was a corruption in politics, a waste of public money and a supervisory failure. That recalled the fact that such centralization was unnecessary.

Our school system had for many years been operated by local authority, even up to the highest units, and had given a good measure of satisfaction. Then as a last straw the demand for bonds and the lay-down in the legislature in giving the control of the dirt roads over to the highway department, when they were not half doing the work they already had in charge, caused a revulsion of sentiment that not only swept the state in the defeat of the bond issue but also taught many people that the whole system was wrong and that instead of getting good roads we were simply being robbed by waste, extravagance and inefficiency.

Accordingly, at the last state grange meeting the legislative committee in its annual report demanded a change in our whole road system and that policy was adopted by the state grange without a dissenting voice or vote. This part of the report follows:

''We hold that as everybody gets the benefit of good roads, everybody should help to pay for them, and because the great majority of roads are essentially local in character, the control of the roads should be vested in the local officials, and in order that the state and county might have authority over the money appropriated for road building, the roads should be systematized and classified, and the appropriation graduated according to the kind of work accomplished. A County Superintendent of roads should be elected by the people to oversee the work of each county, and to advise with the Township Supervisor relative to their work. There should be maintained at Harrisburg a Highway Department sufficient in size and ability to make out specifications for the several grades of roads, to issue from time to time, but at least annually to the County Superintendent and Supervisors, bulletins on improved plans on road building and maintenance.

''In order to inaugurate a complete system of roads, we insist that the sum of $7,000,000 be appropriated annually, and that the money be distributed to the several counties and townships. This money is available, if not under the present operations of our tax law, it can be made available under our recommendations of tax revision which we have advocated for several years.

''We dare not forget that the fight for a good system of road building and maintenance is just begun. When we realize that the control of our township roads was taken from the township by the last legislature in the passage of the 1913 Dirt Road Bill which should be repealed, we can be sure that it will mean a strong and determined effort to wrest this great public service from political domination, and restore it as a part of our system of transportation for the benefit of all the people. The need confronting us at present is for a legislature, governor and highway department who will be responsive to the just demand of good roads for everybody, and we should as grangers in all parties work continuously to accomplish this worthy end. The powers of the township could be enlarged instead of being curtailed.''

Of course, there are some good features in the 1913 Dirt Road Law. If it were a question of repealing this law and getting nothing in its place it might be a doubtful proceeding to repeal it, but it is time for Pennsylvania to get away from a system that duplicates work and offices and get a system that will be comprehensive and practical and which we may depend upon to get us good roads for everybody, just as our school system (while by no means perfect) has brought us a great many good schools.—John A. McSparran.

STATE CAPITAL NEWS

Road Matters Again.—Under the terms of an act passed by the last legislature Pennsylvania will have about 1,200 miles of road automatically added to the 8,000 or 9,000 miles embraced in the highway system established by the Sproul act of 1911. About June 1, last year there was a scramble to add routes to the system and to change some of those already established. Over 100 bills were introduced and the number allowed were voted with utter disregard for the condition of the state funds. One section of road routes is to be taken over on June 1 of this year and more next year. Owing to heavy appropriations for charity the Highway department started the fiscal year of 1913 without enough money to do the work which the act of 1911 contemplated. Added to this handicap is the snarl over the automobile license income. This now amounts to close to a million dollars, counting in what was received after July 9, 1913. This year's receipts alone aggregate over $850,000. This goes to show the lack of a proper legislative appropriation program in regard to road building and maintenance. Most of those who voted for the $50,000,000 amendment resolution which sent the proposition before the people knew that it could not pass and that the sum set aside for road building was inadequate, if the loan failed. And yet they added miles and miles of additional road to the system. The time to get a comprehensive road system is now, when men seek nominations.

Other States Interested.—Pennsylvania's methods in combatting the pests in orchards, especially the farm orchards, are the subject of considerable inquiry at the Capitol and there are prospects that half a dozen states may adopt the plan of creating demonstration orchards.

Milk Supplies Inspected.—Agents of the State Dairy and Food division have been displaying much activity lately in inspection and sampling of the milk and cream supplies for the cities and larger boroughs with the result that the number of violations of the law has been reduced. In a number of cases more water was discovered than the law allows, but no instance of use of formaldeayde or poisoning as preservatives was discovered.

Traction Engines.—The State Highway department has licensed 250 traction engines to travel on state highways and the agitation over the new law on the subject is as strong as ever. Reports are being kept as to how roads stand the strain of the traction engines and of the manner in which the bridges bear up. Meanwhile traction engine owners are planning to present their side of it to the next legislature.

Fertilizer Sampling.—Agents of the State Department of Agriculture have about finished the most extensive sampling of fertilizers ever undertaken in this state, about 3,000 samples having been taken. Many new brands have come into the state recently.

Cattle Dealers Sued.—Half a dozen cattle dealers have been prosecuted in the last month by agents of the State Live Stock sanitary board for selling cattle which had not been inspected, as required by federal and state laws. This work is being conducted jointly by United States and Pennsylvania officials.

Billboards Come Down.—Advertising billboards have been ordered removed from state lands bordering state highways by the Highway commissioner. This action is in accord with recently enacted laws.

Farm Counsellors In Demand.—Reports indicate that three times as many farm counsellors as are now at work in the state visiting farms and giving advice in the field could be used. This department is overwhelmed with requests for visits and while every effort is made to accommodate people making requests this is difficult as the advisors have been forced to travel on a schedule.

Change In Normal Schools.—Within a few weeks the State will be in possession of four of its thirteen normal schools and steps will then be taken to change the courses so that more attention can be given to instruction of teachers who will make agricultural education their specialty. The demand for such teachers is far greater than the supply. The trustees named thus far for the schools are all people in close touch with practical educational requireemnts, two women having been named for Edinboro.—Hamilton, Harrisburg, May 4.

NEW JERSEY FARM NEWS

Legislature Adjourns.—The 138th annual session of the State Legislature has come to a close. The session was marked by many achievements for the good of the people of the State. The agricultural interests were well taken care of. Among new laws which have not received previous mention are these: (A) Requiring railroads within six months after the act becomes operative to provide protection to pedestrians and the traveling public at every public road or street crossing of its tracks at grade in the form of alarm bells, safety gates or whatever other appliances are necessary as a proper safeguard; (B) Providing that all boards of education of the various school districts shall constitute a State federation of district school boards of education, each district entitled to one member as a delegate, which shall have full power to investigate subjects relating to education; (C) Providing for the appointment of a county attendance officer by the commissioner of education if the amount of his salary is not less than $900, and this amount has been subscribed or donated; (D) Changing the title of the State bureau of labor, statistics and industry, to the bureau of industrial statistics; (E) Amending the railroad act of 1903 by making railroad company in condemning property subject to the State board of utilities commission; (F) Requiring containers for fruits and vegetables to have capacity legibly marked on outside of containers. Under this statute manufacturers of baskets must mark the capacity of them before they leave the factory; (G) Placing closed season for next five years on female English, or ring-necked, pheasant, a fine of $20 to be imposed for every bird killed; (H) Authorizing township committees to pass ordinances to regulate the construction and alteration of dwelling houses and other buildings; (I) Increasing from 14 to 16 years the age at which minors desiring to begin work shall need certificates for school exemption.

Two Famous Vetoes.—The Governor has received great credit for his judicious veto of the Ackley bill, which would have taken from the State board of education all control over the building of school houses in the rural districts. It was inimical to the interests of the schools, and nothing can be said in its favor so far as the safety, cleanliness, comfort and educational welfare of the children in the country schools is concerned. The other veto was that of Senator Colgate's bill, to permit animal experimentation by the Rockefeller Research Institute.

Lawn Grass Mixtures.—The seed laboratory of the State experiment station has been making a thoro study of lawn grass mixtures. A complete analysis has been made of what is known as ''Standard Lawn Grass'' which sells for 10 cents a quart at various department stores. The analysis follows: Chaff, 38 percent; weed seeds, 4 percent, or 60,200 per quart of seed; timothy, 30 percent; red top, 11 percent; Canada blue grass, 13 percent; red and alsike clover, 4 percent.—D. T. Hendrickson.

NEW YORK LETTER

Constitutional Convention.—The recent vote on the question of holding a constitutional convention next year carried by the small majority of 1,353 in a total poll of 310,414 votes.

Rural School Day.—At a meeting of the State Board of Regents on April 30, it was decided to appoint a day next fall when the governor should be asked to summon the people of the state to meet in their local school houses to discuss local school matters and to give attention to the general education problems of the state. The health department will also be asked to join in the observance. The purpose is to focus the thought of the people on the conditions, needs and opportunities of the schools and the methods of meeting these needs and opportuniies.

Stockmen Meet.—The American Jersey Cattle club held its annual meeting in New York on May 6. On May 13, the Guernsey breeders meet in the same city and on May 14 the annual meeting of the Dutch Belted cattle association of America will occur. These are all important meetings in the interest of the respective breeds.

Various Items.—The Otsego county Farm Bureau association has a membership of over 600 and efforts will be made to increase it to 1,000. Governor Glynn has vetoed the bill which would extend the benefits of state scholarships to professional schools. The department of labor made nearly 11,000 regular and special inspections during the month of March. Governor Glynn has already signed 488 new laws and the total for the year will probably exceed 500. The season is very late especially in the eastern part of the state. At this writing scarcely any spring plowing has been done.—D.

NEW CATALOGS

Split Hickory Vehicles.—The new catalog of Split Hickory Vehicles and Ohio Tanned Harness will interest every prospective purchaser of these articles. It is a handsomely printed and illustrated booklet of 140 pages describing a full line of buggies, wagons and harness, and explaining the ''from factory direct to you'' selling plan which is saving purchasers from $25 to $40 on each purchase. For free copy address Ohio Carriage Mfg. Co., Station 416, Columbus, O.

The Sole of Steel.—Shoes that insure dry feet, health and comfort and that will outwear and outlast from 3 to 6 pairs of ordinary shoes are described in a new booklet entitled The Sole of Steel, issued by N. M. Ruthstein, Dept. 188, Racine, Wis. These shoes are proving more popular each year. They are made in all sizes and sell from $3.25 to $7 for high lace boots. The catalog is free upon request to the above address.

Stover Ensilage Cutters, Windmills and Feed Grinders.—Three attractive new catalogs are those listing and describing the three Stover specialties, including ensilage cutters ranging in capacity from 6 to 10 up to 20 and 25 tons per hour; windmills ranging from 4½ to 20 feet, and feed grinders of all practical sizes. The catalogs will be sent free upon postal card request addressed to Stover Mfg. Co., 192 Samson St., Freeport, Ill.

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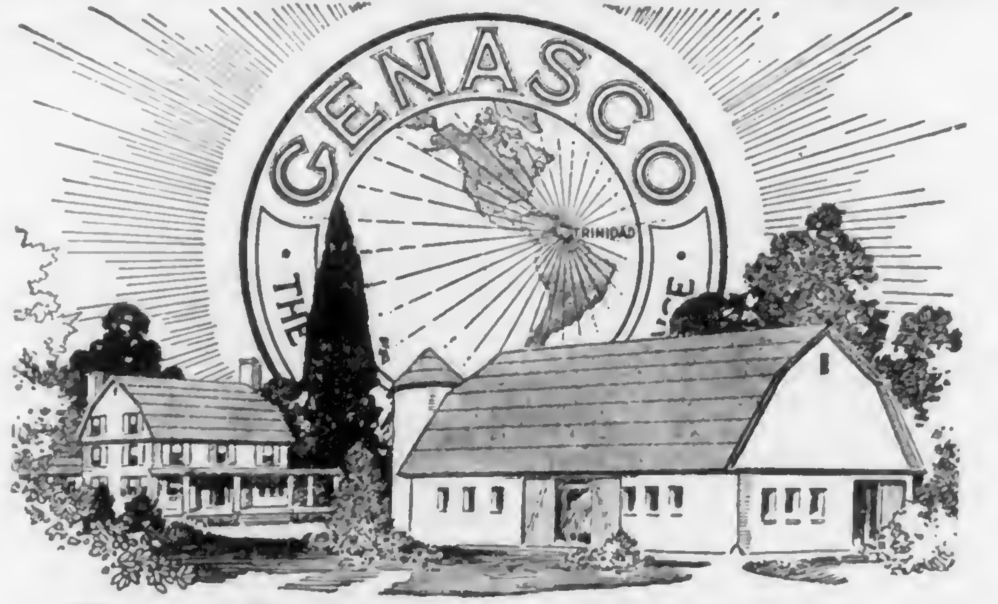

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Something About Asparagus

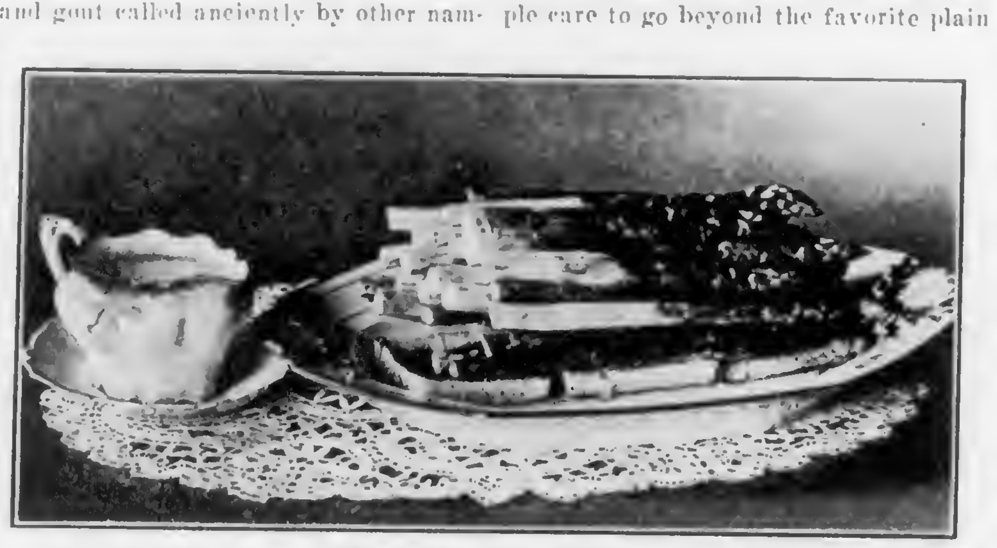
By MARY MILLER BUCHANAN.

The name of this much-esteemed lily-stalk is made to sound like "sparrow-grass" in many months. There really has been an idea in some quarters that the small birds are very fond of the juicy stalk. The word comes from the Greek, "asparagos," an edible lily that grew wild on many shores of the Grecian archipelago. The original seashore "asparagos" loved the salt sands, but grew thin and small for lack of the nourishing stuffs necessary to nurse the stalk into the thick succulent stems we know and love so well. It wanted more than salt and soda. In Russia whole steppes are carpeted with wild asparagus to this day. Cattle are sent out upon this fodder, and they thrive very well upon it.

ASPARAGUS SALAD.

Known from very remote times, this one of the liliacæ was chosen on account of its stalk for table use. Its kin lilies, the garlic, shallot, onion, were despised for their stalks and esteemed only for their underground portion, the bulbs, with their stimulating property and "sting." Asparagus was a tuber, whose only use is to send up its goodness into the stems—a sufficiently good use, too.

The Greek sea plant, asparagos, was found to have medicinal uses on account of a property it had for reducing dropsy. In cases of rheumatism and gout called anciently by other names, but just as painful as today, the plant is said to have afforded relief. The sea-salt was believed to have entered it and made the thin stems palatable. They were boiled first and the liquid thickened with all the soft portion, then this was taken as a kind of physic. But it was soon found that the pulpy part was quite nice to eat for its own sake, and from that discovery it was a short step to prepare all of it for the table.



BOILED ASPARAGUS ON TOAST.

It was not exactly the sodas or salts found in the asparagus that made it so useful as a laxative, altho, of course, these had their value. Asparagus, indeed, is a very saline article, for it holds one percent of potashes, magnesia, some iron, and various mixtures of the usual mineral materials drawn from a rich soil by the lily race. Onion and shallot are well known to contain a good variety, and to have some sulphur also. Asparagus is like its relatives, but its sulphur is not strong enough to give any "bite". However, the mingling of its salts makes a very appetizing vegetable. Not any of its salts or mineral matter is present in too keen amount.

A certain compound, asparagin, is found in pronounced form in asparagus, and therefore gives its name. It is this compound that does so much good, especially for inflammation. Asparagin is also found in several other plants, for instance in the marshmallow, so useful in ointment-making, and as a herb for coughs, colds, and all inflammatory complaints, and also in liquorice, another good laxative, the root of which makes an ingredient in many cough decoctions. The black stick liquorice is made from the expressed juice of the root, and its uses are widely known. Asparagin is found in all these physic plants. This being known, the eaters of asparagus may find very good excuse for indulging daily in their favorite delicacy.

It needs cream or butter in its sauce, or half the pleasure of partaking of it will be lost. There are various ways of cooking the juicy stems, but few people care to go beyond the favorite plain boiling with a nice cream or butter sauce to accompany it. Asparagus should be put in cold water till ready to be boiled in well-salted water that must be at a galloping boil when the vegetable is put on. Twenty minutes should cook it, but if the stems are rather old and so getting tough, half an hour will be right. When the bundles are drained and the string cut, the asparagus may be arranged on slices of toast. A nice melted butter sauce will serve if cream be lacking.

To have asparagus in perfection, that cut from the garden just before the cook wants it to put on the fire is beyond measure the best. Shop asparagus has been cut some time. After the cutting some changes occur in the substance, slight but certain, that involve a small difference in flavor. But this is so with all vegetables. A skilled gardener cuts a whole bunch exactly the same amount of white stalk attached to each stem. The white part is the portion that has grown below the soil, and the knife has to be inserted into the soil some little way, then the stem is cut with an upward turn of the knife.

The stem-portion which has reached the light at once begins to develop color bodies. Red-tipped or green-tipped, it matters not for delicacy which kind be chosen. In the green the chlorophyl cells are well developed; in the red-tipped, other color cells are in activity.

The juicy stems have reason to be soft and tender, since they contain exceedingly little fiber and are composed of about 93 percent of water, filled with the various salts mentioned. Some of its delicacy it owes to the presence of some fruit sugar; out of a hundred pounds of tender, succulent stems ready for cooking, over three pounds of pure asparagus sugar could be extracted, and the waste portion would only amount to a half of this weight of sugar, exactly.

Asparagus cream made with eggs, double cream, pepper, salt, and thickened with the soft delicate tips, is one of the daintiest known dishes.

Asparagus With Cheese. — Having carefully scraped the vegetable, boil it 20 minutes in boiling salt water. When sufficiently cooked take it up and allow it to get cold; the soft end must then be dipped into a well-made white sauce, made thus: Put 2 tablespoonfuls flour into a pan and mix over the fire; add gradually 2 large cupfuls of milk, a little salt and pepper, and stir until they boil. Cook 8 minutes, then remove from the fire and add 2 yolks of eggs. Then roll in grated cheese, and when the sauce is quite set, dip them into well-beaten egg, roll in freshly made breadcrumbs, and fry in smoking hot fat.

Asparagus Dainties.—Cut the tops off eight small dinner rolls, scoop out the soft part of the crumb, leaving only the thin shells, place them in the oven to get dry and crisp, or fry them in smoking hot fat. Boil ½ pint of asparagus tips in salted water until tender, drain; heat 1 cupful of white sauce and pour into the asparagus; season with pepper, salt and a grate of nutmeg; beat the yolk of 1 egg with a little cream, and add to the above. Stir gently over the fire long enough to bind the yolk and to make thoroly hot without boiling; lastly add just a drop or two of lemon juice; fill the rolls with this mixture, dish up on a folded napkin, garnish with a few sprigs of parsley, and serve hot.

Asparagus Omelet.—This is a good recipe for using cold boiled asparagus. Remove any sauce by pouring hot water over it, cut the tender part into inch lengths, sprinkle it with pepper, salt, and grated nutmeg, or flavor with chopped ham. Have ready 3 eggs broken in a basin, and 2 tablespoonfuls of butter, the asparagus, and a hot dish on which to serve the omelet; also a knife, tablespoon, and clean dry omelet pan. Put the butter into the pan, and while it is melting beat the eggs with a knife just enough to mix them; throw in the asparagus, quickly turn the mixture into the pan, and stir it into a thick puff shape, loosen it at the edges, turn it over to the further side to lightly brown, reverse the pan over the dish and the omelet will fall out. Be careful not to overcook it, for the inside should be quite soft.

Boiled Asparagus.—Cut the stalks of the asparagus to an even length. Tie with tape into small bundles of about 18 in each. Keep these in cold water until needed for cooking. Have ready a pan of boiling salted water and add a few drops of lemon juice. If there is not a drainer fitted to the pan, on which to lift out the bundles when cooked, it is best to wrap up each bundle in a piece of muslin, to prevent breaking off the points. Lay the bundles gently into the water, which should just cover them, leave the lid off and boil the asparagus for 20 to 30 minutes, or until tender. Lift it out carefully and drain well. Remove the tape and lay the heads neatly on a slice of dry trimmed toast laid on a folded napkin in a hot vegetable dish. Arrange the points all one way. Hand melted butter mixed with a few drops of lemon juice with them.

Asparagus And Egg Loaf.—One and a half cupfuls cooked asparagus tips, 4 hard cooked eggs cut in slices, 1 cupful thick white sauce, seasoning of salt and white pepper and a few drops of onion juice. Add to the white sauce the eggs, seasonings and the asparagus tips, and mix well together. Put in a well buttered mold and place in a pan of hot water, bake in oven until firm. Turn out and serve.

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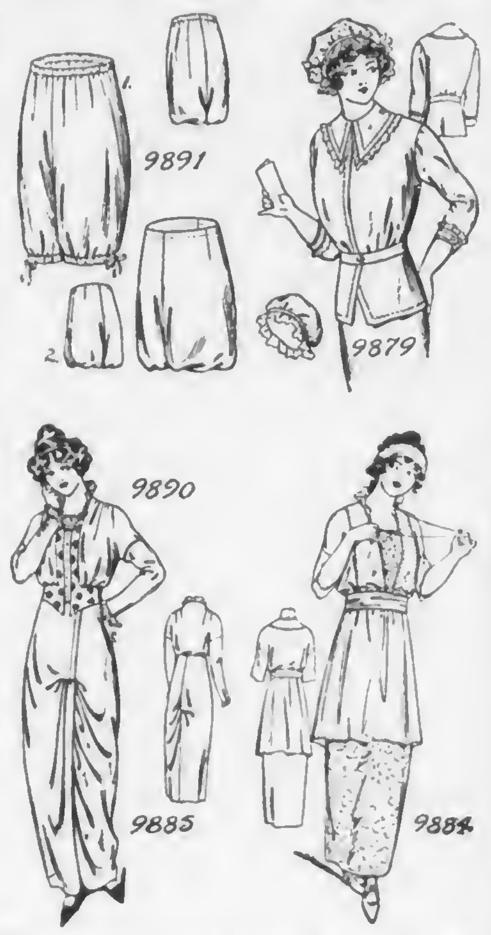

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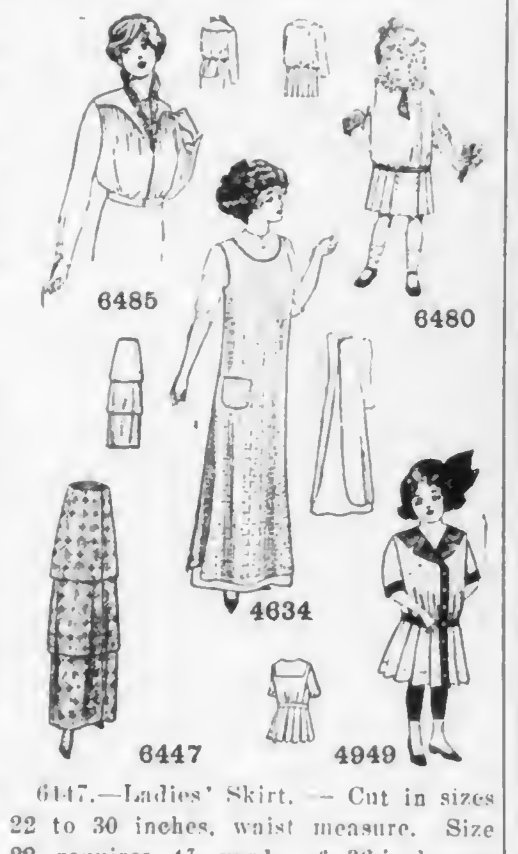

6447.—Ladies' Skirt. — Cut in sizes 22 to 30 inches, waist measure. Size 22 requires 4⅞ yards of 36-inch material. Price, 10 cents.

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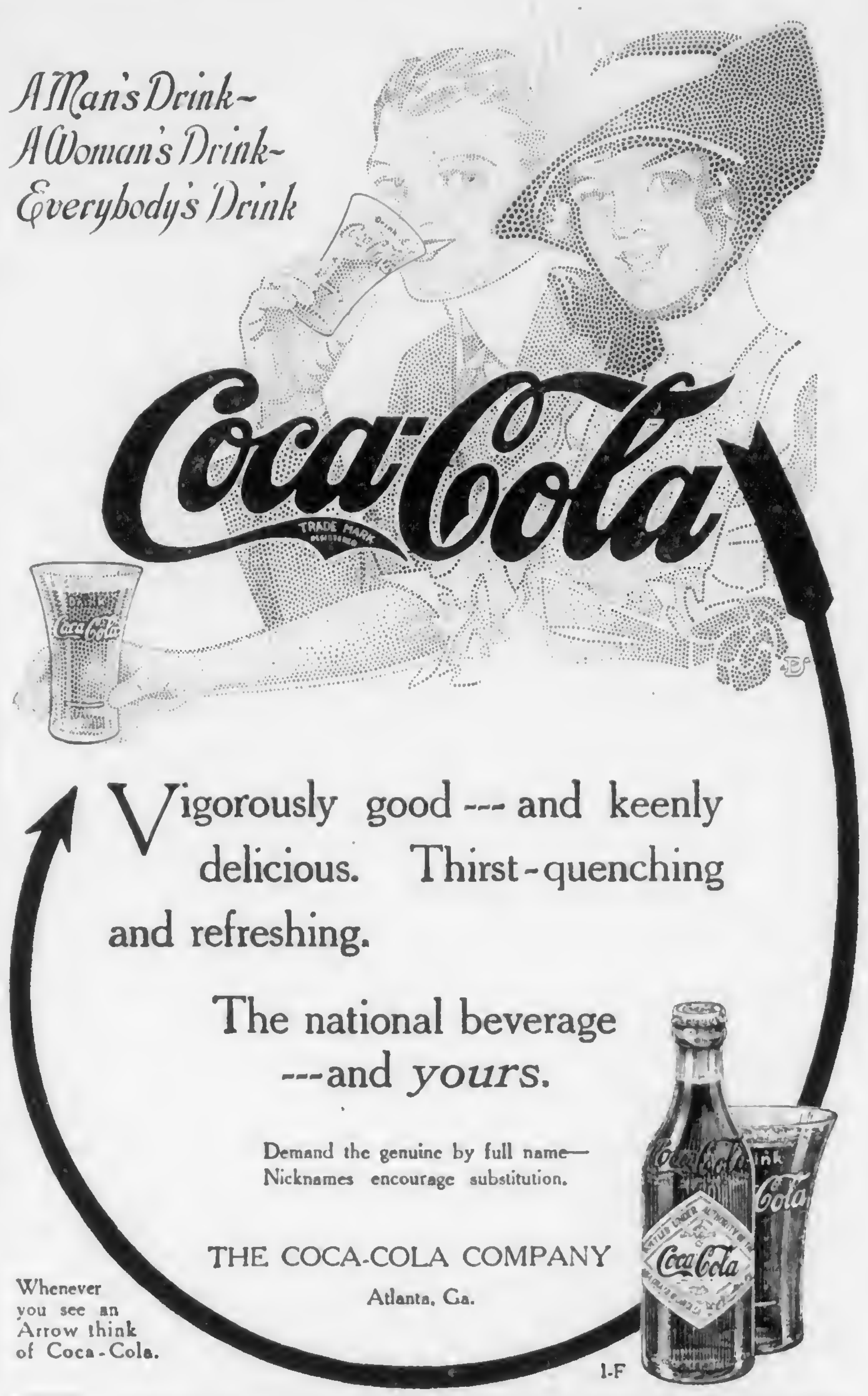

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MR. PRATT

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SYNOPSIS OF PREVIOUS CHAPTERS

Solomon Pratt, principal character and skipper of Wellmouth, a New England seaport, becomes acquainted with two New York business men, Van Brunt and Hartley, summer boarders at the home of Nate Scudder, a grasping individual. Pratt later finds them interesting, but takes them for lunatics and their "man" for their keeper. The "twins" as the New Yorkers are dubbed after harrowing experiences with their "man" and Hannah Jane Purvis, a garrulous individual, as cooks, have asked Pratt to serve in that capacity. Pratt has jokingly suggested to Van Brunt the possibility of their vacation being curtailed by Van Brunt's marriage.

CHAPTER III (Continued)

Van, he looked hard at me for a minute. I thought first he was mad at me for putting in my oar where it wa'n't supposed to be. Then he laughed. "Sol," says he, "that young lady and I are kindred spirits. For a year I'm natural and happy, and she can nurse her Hooligans and go on charity sprees. Then—well, then we fall back on our respected parents and wedded —er—bliss. Hey, Martin?"

Hartley, in the shadow of the vines, lit another cigar and nodded. But he didn't say nothing.

For the next three or four days I chased around trying to find a house and lot where them heavenly lunatics could be natural. I located a couple of bully summer places, all trees and windmills and posy beds and hot and cold water and land knows what. But they wouldn't do; they "smelled of coupons," Van said. What they really wanted, or thought they wanted, was a state's prison in a desert, I judged.

For a week or ten days we kept the hunt up, but didn't have no luck. Whenever I'd think I'd uncovered a promising outfit the Heavenlies would turn to and dump in a cargo of objections and bury it again. After five or six funerals of this kind I got sort of tired and quit. It got to be July and their month at Nate's was 'most over. I was up the evening of the Third and I happened to ask 'em if they wanted me and the sloop for the next day. There was to be a Fourth of July celebration over at Eastwich, and some of the boarders wanted to go and see the balloon and the races and the greased pig chase, and such like. If the Twins didn't care I'd take the job, I said. But they took a notion to go themselves. Van said 'twould be an excuse for me to give 'em another chowder, if nothing more. So, on the morning of the Fourth we started, me and Van Brunt and Hartley and Lord James, in the Dora Bassett. Talk about cruises! If I'd known—and yet out of it come—But there! let me tell you about it.

CHAPTER IV

The Pig Race

I don't cal'late that I ever had a better run down the bay than I done that morning. 'Twas a fair wind, and a smooth sea, not the slick, greasy kind, but with little blue waves chasing each other and going "Spat! spat" under the Dora Bassett's quarter as she danced over 'em. And that's just what she did—dance. There wa'n't any hog-wallowing for her; she just picked up her skirts, so to speak, and tripped along—towing the little landing skiff astern of her—like a sixteen-year-old girl going to a surprise party.

An early July morning on the bay down our way is good enough for yours truly, Solomon Pratt. Take it with the wind and water like I've said; with the salt smell from the marshes drifting out from the shore, mixed up with the smell of the pitch-pines on the bluffs, and me in the stern of a good boat with the tiller in my hand and a pipe in my face—well, all right! That's my natural life; and I don't need no book to tell me so, neither.

The Heavenlies enjoyed it, and they'd ought to. 'Twas clear then, tho it got hazy over to the east'ard later on. But then, as I say, 'twas clear, and you could see the schooners strung out on the skyline, some full up, with their sails white in the sun, and others down over the edge with only their tops'ls showing. Far off, but dead ahead, just as if somebody had dipped their finger in the bluing bottle and smouched it along the bottom of the sky, was the Wapatomac shore, and away aft, right over the stern, was the Trumet lighthouse, like a white chalk mark on a yellow fence, the fence being the high sand bank behind it.

The twins laid back and soaked in the scenery. They unbuttoned their jackets and took long breaths. They actually forgot to smoke, which was a sort of miracle, as you might say, and even Hartley, who had been bluer than a spoiled mackerel all the morning, braced up and got real chipper. By and by they resurrected that book of theirs and had what you might call a Natural Life drunk. I never see printing that went to a person's head the way that book seemed to go to theirs. I judged 'twas kind of light and gassy reading and naturally riz and filled the empty places same as you'd fill a balloon.

Everybody was happy but Lord James, and I could see that he wa'n't easy in his mind. He set about midships of the cockpit and hung onto the thwart with both hands, like he was afraid 'twould bust loose and leave him adrift. If the Dora Bassett had struck a derelict or something and gone down sudden I'll bet they'd have dredged up that Hopper valet and the thwart together. And then they'd have had to pry 'em apart. His Lordship wa'n't used to water, unless 'twas to mix with something else.

By and by Hartley shoves both hands into his pockets, tilts his hat back and begins to sing. More effects of the Natural Life spree, I suppose, but 'twas bully good singing. Might have been saying most anything, calling me a short lobster for what I know, 'cause 'twas some foreigner's lingo, but the noise was all right even if I did have to take chances on the words. I cal'late to know music when I hear it.

"Good!" says Van, when his chum stopped. "Martin, you're better already. I haven't heard you sing for two years or more. The last time was at the Delanceys' 'At Home.' Do you remember the Dowager and 'My Daughter'? Heavens! and 'My Daughter's' piano playing! Agnes told the Dowager that she had never heard anything like it. You and she were together, you know. Give us another verse."

But Martin wouldn't. Shut up like a clam and reached into his pocket for a cigar.

"That was A No. 1, Mr. Hartley," says I. "I wish you could hear Solon Bassett play the fiddle; you'd appreciate it."

Van he roared and even Hartley managed to smile. As for Lord James he looked at me like I'd trod on the Queen's corns.

Blessed if I could see what there was funny about it. Solon can play like an Injun. Why, I've seen him bust two strings at a Thanksgiving ball and then play "Mrs. McLeod's Reel"—you know, "Bucksee, nanny-goat, brow bread and beans" on t'other two, till there wa'n't a still foot in the hall.

We made Eastwich Port about noon and had dinner. I cooked up a kettle of chowder—fetched the clams along with me from home—and 'twould have done you good to see the Heavenlies lay into it. Lord James he skipped around like a hopper-grass in a hot skillet, fetching glasses and laying out nine or ten different kind of forks and spoons side of each plate, and opening wine bottles, and I don't know what all. When he hove in sight of the wharf that morning he was toting a basket pretty nigh as big as he was. I asked him what it was.

"Why, the 'amper," says he.

"The which?" says I.

"The lunch 'amper, of course," he says. "The 'amper for the heatables."

Well, I wondered then what in the nation was in it, for 'twas heavier than lead. I remember that the heft of it made me ask him if he'd fetched along some of the late Hannah Jane's left-over riz biscuit. But now I see why 'twas heavy. There was enough dishes and truck for ten men and the cook in that basket. We had my chowder and four kinds of crackers with it, and chicken and asparagus, and nine sorts of pickles, and canned plum pudding with sass, and coffee and good loud healthy cheese, and red wine and champagne. When I'd hoisted in enough of everything so my hatches wouldn't shut tight, and was pulling on one of the Twins' cigars, I says to Van——

"Mr. Van Brunt," says I, "is this part of what you call the Natural Life?"

"You bet, skipper!" says he. He hadn't finished the chowder end of the layout yet.

Well, I heaved a sigh. 'Twas kind of unnatural to me, having come on me all at once; but I cal'late I could get used to it in time without shedding no tears. Didn't want to get used to it too quick, neither; I wanted the novelty to linger along, as you might say.

When the dinner was over—the Heavenlies was well enough acquainted with the family to nickname it "lunch"—I started to help his lordship wash dishes. The Twins sprawled themselves under a couple of pine trees and blew smoke rings.

"Hurry up there, messmate," says I to the valet; "I want to get thru time enough to run up to the fair grounds and see that greased pig race."

Hartley had been keeping so still I cal'lated he was dropping off to sleep, but it seems he wa'n't. He set up, stretched, and got to his feet.

"I'll go with you, skipper," says he. "Might as well do that as anything. I've never seen a greased pig race. They don't have 'em on the Street."

(To be continued)

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Poultry.—Fowls, 17½@18½c; old roosters 13@14c; chickens, 35@40c; pigeons, young 25@28c.

Dressed Poultry.—Western fowls 13@18½c; roosters, 14c; squabs $2@4.65 per doz.

Vegetables.—White potatoes, Pa., 80c@$1 bu. Onions, new $1.60@1.70 per crate. Peppers $2.00@2.25 per carrier. Eggplant $2.00@3.00 crate; lettuce 50c@$1.50 per hamp. Beets 1@6c per bch. Sweet potatoes 40@55c hamper. String beans $1.75@2.50 hamp. Squash $1.00@1.50 hamp. Cucumbers Florida, $2.00@3.00 bas. Celery $1.50@2.00 crt. Cabbage, new $1.50@2.00 bbl. crate. Asparagus $1.50@3.50 doz bunches; spinach 75c@$1.50 bbl; radishes, 2@3c bunch; carrots 2@4c bunch.

Fruits.—Apples $4.00@6.00 bbl. Pineapples crt $2.50@3.00; lemons $2.00@3.25 per box; grape fruit $2.00@4.00 per box; oranges $2.00@4.50 per box; strawberries, 12@22c per quart.

Hay and Grain.—No. 1 hay, large bales, $19.00@19.50; No. 1 medium $19.00; no grade, $10.00@12.00. Clover mixed hay, light mixed at $17.00@17.50; straw No. 1 straight rye, $17.00@17.50; No. 2 do., $16.00@16.50; No. 1 tangled rye straw new $12.50@13; No. 2 do., $11.50@12; No. 1, wheat straw, $10@10.50; No. 1 oat straw, $10.50@11; corn No. 2 yellow, new 75@75½c. Wheat No. 2 red 98½@99c; No. 1 Northern $1.03@1.04; No. 2 white oats 41½@43c; No. 3 white 42½@43c; standard white 43½@44c.

Coffee.—Rio 7s 8⅝c; Santos 4s 11½c. Mild Coffee.—Cordova 12½c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.10@4.15; powdered, $3.95@4.00; granulated, $3.85@3.90; standard granulated, $3.90@3.95; crystal A, $3.90.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Hams cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅝@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6⅞c; country, 6¾c; do. dark, 5½c; do cakes, 7c.

Philadelphia Retail

Vegetables.—Onions 40c ½-pk. Peppers 30c doz. Eggplants 10@30c apiece. Cabbage 5@15c head. Lettuce 5@15c. Beets, new 10c bch. 3 for 25c. Sweet potatoes, 40c ½-pk. White potatoes, 25c ½-pk. String beans 60c ¼-pk. Tomatoes 25c per quart. Squash 4 for 25c. Cauliflower 25@35c apiece; mushrooms 40@50c per lb; asparagus 35@50c bunch; cucumbers, 5@15c apiece; celery 85c doz bunches; radishes 5c bunch.

Fruit.—Apples 50c per ½-pk. Pineapples 25@35c apiece; grapefruit $1.00@1.75 per doz; oranges 25@60 doz; lemons, 15@25c per doz. strawberries, 25@40c per quart.

BALTIMORE PRODUCE

Baltimore, Md., May 4, 1914.

In the Baltimore wholesale market butter, eggs and poultry were steady.

Butter.—Creamery, fancy 25½@26c; do. choice 24@25c; prints 26@28c; blocks 26@28c; Maryland and Penna. rolls, 16@18c; process, 20@22c.

Eggs.—Near-by firsts, 19½c; western, 19½c; southern, 18½c.

Live Poultry.—Hens, 17½c; chickens, 20@22c; old roosters, 11c; ducks, 13@16c.

Vegetables.—Potatoes, Maryland and Pa., [illegible] 85c bu; beets 5@6c bch; beans, green $2.25@2.75 per basket; celery $2.50@2.75 crate; cucumbers, $3.50@4.00 bas; lettuce $1.00@1.25 bas; tomatoes $2.00@3.50 carrier; onions $2.50@2.75 sack; eggplant $2.50@2.75 crate; cabbage, $1.00@1.50 per crate; asparagus $2.00@2.50 per dozen bunches; radishes, 65@85c basket; rhubarb, 2½@3c bunch.

Fruit.—Apples, $3.00@4.50 bbl. Grapefruit $2.50@4.00 per box. Oranges $3.25@[illegible] per box; strawberries, 10@35c quart.

Grain.—Wheat No. 2 red western 98¾c; [illegible] 98½c corn yellow shelled, 76c; oats, standard white 43¾@44c; No. 3 white 42¾@[illegible]; rye 60@71c.

Hay & Straw.—Timothy No. 1, $19@19.50; No. 2 timothy $17.50@18.00; do. No. 3, $15.[illegible]@16.50. No. 1, clover $16.50@17.00; No. 2 do. $14.00@15.50; No. 1, tangled rye straw $12@12.50; No. 1 oat straw $11.00@11.50. No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $28.50@29. Middlings, flour to white $29@31; western middlings $28.50@29.00; city mills, middlings, $28.50@29.00.

NEW YORK PRODUCE

New York City, May 4, 1914.

With a very moderate quantity of fancy butter stock available, prices were advanced [illegible] cent. Egg arrivals continue comparatively light and there is not much life to the trading. Poultry demand continues [illegible] with feeling weak and irregular. Fruits and vegetables fluctuating.

Eggs.—State and near-by hennery whites, fine to fancy 23@24½c; gathered whites, fair to good 21½@22½c; fresh gathered firsts to extras 21¼@22½c; seconds to [illegible], 19@20½c; no grades 16½@19c; mixed 21@21½c.

Butter.—Creamery firsts to extras 24@26½c; thirds to seconds 21@23½c; state dairy 18@25½c; packing stock 14@16½c; process 15@21c.

Cheese.—Whole milk specials, 14@14¼c; do. common to fancy, 11@13¾c; skims 4@[illegible].

Dressed Poultry.—Turkeys, dry, 16@25c; chickens 13@23c; fowls, 14@18½c; old roosters, 11c; ducks 10@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage $1.50@2.50 crate. Green beans, $1.50@2.75 bas; carrots $1.50@2.25 bag. Cucumbers 60c@$1 doz. Lettuce 25c@$1 bas; squash 25@75c basket; celery $2.50@3.75 standard crate; onions $1@2.75 per 100-lb bag. Tomatoes, $1.00@2.50 carrier; peppers 50c@2.75 per box; beets, $2.00@5.00 per 100 bchs. Potatoes, $2.00@5.25 bbl; sweet potatoes, 75c@$1.10 bas; eggplants, $1@3.25 box; cauliflower 50c@$1.25 per ½-crate; asparagus, $2.25@4.50 per doz. bunches; radishes, 25@60c basket; rhubarb $1.50@2.50 per 100 bunches.

Fruit.—Apples, $2@7 bbl. Grapefruit $1@4.00 per box; oranges, $1.50@4.25 per box; strawberries 10@25c quart.

Grain.—Wheat, No. 2 red 99@99½c. No. 1 Northern, $1.03½@1.04½; corn, No. 3 yellow 73½@74c; oats, standard white 44@44½c.

WASHINGTON PRODUCE

Washington, D. C., May 4, 1914.

Eggs.—Per dozen, 20c.

Live Poultry.—Hens, per ponud, 17c; roosters, 11c; spring chicken 36@38c.

Vegetables.—Potatoes, $5@5.50 per bbl. Onions, $2.00 per crate; lettuce per bas., 75c@$1.50; peppers, $1.50@2.00 per crate; eggplant, $1.75@3.00 crate; beets, new, 4@6c per bunch; carrots 3@4c per bch; cabbage 50@75c per bas; cucumbers $2.50@3 bas; sweet potatoes $1.50@2.00 bbl; celery, per doz., 60c@$1; tomatoes $1.25@2.50 crate;asparagus $1.50@3.00 per doz. bchs; peas, $1.00@3.00 basket; lima beans $4.50@5.00 crate; radishes, $3.00@4.00 per 100.

Fruit.—Apples, $4@6.50 per bbl. Pineapples, $2.25@2.75 per crate; grapefruit, $3.00@4.00 per crate; lemons, $2.75@3.00 per box; oranges, $2.65@3.00. per box

WILMINGTON PRODUCE

Wilmington, Del., May 4, 1914.

Butter.—Print butter, 35@40c lb. Creamery roll, 40c.

Poultry.—Chickens, dressed, 18@25c; ducks, 15@20c.

Eggs.—20@24c doz.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk. Cabbage, new 5@15c. Sweet potatoes 50@60c bas. Onions 20@25c ¼-pk; new 20c qt. Eggplants 10@15c ea. Peppers 20@40c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch; string beans, 20c ¼-pk; peas, 25c ¼-pk; spinach 10c ¼-pk; asparagus, 35@40c bunch; tomatoes, 15@20c quart; squash, 10c each.

Fruit.—Apples, 15@25c ¼-pk. Pineapples 20@25c apiece, Oranges, California 20@30c doz. Florida, 35@40c doz. Bannanas, 10@15c doz. Grape Fruit, 7@10c each; strawberries 40@50c box; lemons 12@15c doz.

YORK PRODUCE MARKET

York, Pa., May 4, 1914.

The markets were well attended and the stalls plentifully supplied with all seasonable produce. Eggs are advancing.

Eggs.—19@21c doz.

Butter.—Country, 28@33c; separator, 30@35c. Milk, 6c per quart. Cream, 10@12c per pint.

Poultry.—Hens 15@16c per pound. Dressed poultry, 45@75c each.

Vegetables.—Potatoes 12@16c ½-pk; 85c@1.00 bu; cabbage 3@8c each; lettuce, 3@8c; beets, 3@5c bch; radishes 3@5c bch; onions 2 bchs for 5c, 12@18c ½-pk; lima beans 14@16c qt; sweet potatoes, 14@16c per ½-pk; lard 14@16c lb; celery, 8@12c; peppers, 8@12c doz; turnips, 10@12c ½-pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 22@25c qt; asparagus, 10@15c bch; rhubarb, 3@6c bch.

Fruit.—Apples, 20@25c ½-pk; strawberries 25@30c.

Retail Grain Market.—Wheat, $1.04 bu; corn, 88c; oats, 55c; rye, 77c; bran, $1.60 cwt; middlings, $1.60 cwt.

Wholesale Grain Market. — Wheat, 94c; corn, 74c; oats, 44c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 4, 1914.

Beef Cattle.—Trade was moderately fair, the market being fully supplied with Pennsylvania and Ohio cattle, the choicest steers ruling a fraction stronger. Calves and cows of the better sorts closed a trifle firmer.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,058	7,813	5,143
Previous week	3,245	9,000	4,696

Best steers	$8.80@8.90
Choice steers	8.60@8.70
Good do	8.25@8.40
Medium steers	7.50@8.40
Common steers	7.00@7.25
Bulls	5.00@7.00
Fat cows	5.25@7.00
Medium cows	3.75@4.75
Thin cows	2.75@3.25

Veal calves lower.

Best calves	$10.00@10.50
Good to choice do	9.00@9.50
Medium	7.00@8.00
Common do	6.00@7.00

Sheep and Lambs.—Values were well-maintained on every grade, the market closing under a fair disposal, clipped stock was coming along in a limited manner.

Choice wethers	$6.50@6.75
Good do	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.50@8.75
Good to choice do	8.00@8.25
Common to medium	6.00@8.00

Hogs.—There was an easier range of prices predominating, altho holdings were under good control. Western, $12.00@12.25.

City Dressed Stock.—Every variety of choice and prime meat commanded steady prices, trade being about normal. Steers 12@14c; heifers 10½@13c; cows, 9@11c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 11@12c; extra wethers 13c. Spring lambs 14@15c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 4, 1914.

Cattle.—With a light supply here, 75 loads compared with 125 loads a week ago, the market ruled active and generally 10 to 25c higher, while some sales were as much as a quarter higher. Light and choice weighty cattle were in the better demand. Fat cows and heifers were in light supply and sold at about the same advance as steers. Very few bulls were on sale and the market was 25 to 40 cents higher than a week ago. Best fresh cows were steady to strong; other grades and springers slow. Today's supply was 95 loads. With a fair demand, the market ruled about steady on desirable grades.

Good to choice	$8.75@9.00
Good 1,300-1,400 lb.	8.50@8.70
Medium to good 1,200-1,300 lb	8.10@8.50
Tidy 1,050-1,150 lb	8.10@8.50
Fair to medium, 900-1,100 lb.	7.50@8.00
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs	5.75@7.00
Common to good fat oxen	4.50@7.00
Common to good fat bulls	5.50@7.75
Common to good fat cows	4.25@6.75
Heifers	5.50@8.00
Bologna cows	3.75@4.25
Fresh cows and springers	25.00@90.00

Calves.—Veal calves were in light supply and closed 50 cents per cwt. higher. Today's supply was 1,200 head, which sold lower, tho active.

Heavy and thin calves	$5.00@6.50
Veal calves	7.00@9.25

Hogs.—The supply during the week has not been liberal but with easier prices prevailing at western points the close for the week here was 25 cents below Monday's prices, and during the latter part of the week the decline was even greater, but the market was a little firmer on Saturday and a little of the loss gained. Today's receipts were 65 double-deck loads, and the market was 15 to 20 cents lower than Saturday.

Prime heavy	$8.65@
Heavy mixed	8.70@
Prime medium weights	8.75@
Best heavy Yorkers	8.75@
Light Yorkers	8.75@
Pigs	8.70@8.75
Common to good roughs	7.50@7.90
Stags	6.50@7.00

Sheep and Lambs.—The supply of sheep and lambs has been fair. Sheep have ruled steady, while there has been a good demand for lambs and the market closed 25 cents higher on choice lambs, while other grades were only steady. Today's receipts were 25 double-deck loads. The market was slow on heavy sheep, but other grades of sheep and lambs were active at steady prices. There was a fair supply of spring lambs, and with a light demand the markets went lower.

Prime wethers	$5.50@5.60
Good mixed	5.25@5.40
Fair mixed ewes and wethers	4.50@5.00
Culls to common	3.00@4.00
Culls to choice lambs	5.50@7.75
Spring lambs	8.50@12.00

BALTIMORE LIVE STOCK

Baltimore, Md., May 4, 1914.

Cattle.—Receipts for the week were 1,667 head, against 2,404 last week.

Steers	$6.25@8.35
Heifers	5.50@6.75
Cows	3.00@5.75
Bulls	5.25@6.75
Fresh cows	32.50@72.50

Sheep and Lambs.—Receipts for the week were 2,600 head against 3,442 last week. Light supply; market steady.

Wool sheep	$3.75@6.50
Clipped sheep	2.75@5.75
Wool lambs	6.00@9.00
Clipped lambs	5.00@7.80

Hogs.—Receipts for the week were 10,318 head against 11,849 last week

Light western	$9.10@
Heavy to medium	8.95@9.00
Near-by	9.00@9.10
Pigs	8.75@8.90

Calves.—Receipts for the week were 208 head again 399 head last week. Light supply, market higher at $6@10.00.

BUFFALO LIVE STOCK

Buffalo, N. Y., May 4, 1914.

Cattle.—The week opened with a large supply. The demand was good and prices firmer. For the balance of the week, the market was firm on the good grades. The close was active and prices stronger. Today's supply totaled 3,500 head, and the market ruled 15 cents higher.

Choice heavy steers	$8.85@9.15
Fair to good	8.25@8.65
Yearlings	7.75@8.65
Handy butchers	6.75@8.40
Good to choice fat cows	6.75@7.25
Good to choice heifers	7.50@8.00
Butchers bulls	4.50@7.35
Feeders	5.50@5.75
Cows and springers	30.00@90.00

Calves.—With the heaviest receipts of the season on Monday, 2,000 head, the trade was in a good position. On the close, the trade was generally good at $9@9.80 for the best. Today's receipts were 1,500 head.

Choice veals	$9.00@9.50
Lights and thin	6.00@8.75

Sheep and Lambs. — The early receipts were liberal and the trade active but lower. Wool lambs sold up to $8.50@8.75. The demand for the best clipped sheep was moderate. On the close the general trade was active and lambs mostly 20c lower. The basis on the best lambs was $7.50@7.65. Sheep were in good demand. Today's receipts were 13,000 head, and the market ruled steady.

Choice lambs	$7.65@7.85
Yearlings clipped	6.25@6.75
Wethers	5.50@5.75
Ewes	5.00@5.50

Hogs.—The liberal receipts caused a lower basis on the Monday market. Rough and common hogs were draggy. On the close, the trade was fairly active but lower. Rough and dairy hogs were easier with several decks unsold. Today's receipts aggregated 18,000 head.

Heavies	$8.75@8.80
Mixed and medium	8.75@8.80
Yorkers	8.75@8.80
Light Yorkers	8.75@8.80
Pigs	8.75@
Roughs	7.50@7.75
Stags	6.00@7.00

Horses.—There was no particular change in the trade. The offerings were 475 head, with a fairly active demand for choice workers. There was some inquiry for fancy drives.—There was a fair trade in horses today, best selling prices steady with last week.

CHICAGO HORSE MARKET

Chicago, Ill., May 4, 1914

Horses were in ample supply last week altho the receipts continued much smaller in numbers than a year ago, with a restricted general demand. Inferior animals were bad sellers around $50@100 per head, while drafters of heavy weight and superior quality were salable at $250@300 with not many going near the top price. Fair to good drivers sold around $125@175, and ordinary to good drafters sold for $185@225. Farm chunks sold at $110@210 for geldings, with few as high as $185, while good farm mares sold at $200@210. Wagon horses brought $185@240. A carload of unusually prime heavy horses was sold to a Maine buyer, the lowest-priced horse costing $300, while two pairs sold at $1,000 and $1,200.

NEW YORK LIVE STOCK

New York City, May 4, 1914

Beef Cattle.—Receipts for week 3,100 head. Market irregular.

Steers	$6.50@9.25
Bulls	5.50@7.85
Cows	3.50@6.75

Calf receipts 10,400 head. Market lower.

Choice	$6.50@9.75
Culls	5.00@6.50.

Dressed calves steady. Dressed veals 12@15c.

Sheep and lambs receipts 13,000 head. Market steady.

Sheep	$4.00@5.50
Spring lambs	7.00@7.90

Hog receipts 11,300 head. Market steady. Choice $8.80@9.00.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., May 4, 1914.

Hay.—The receipts of hay still continue exceedingly light but buyers are lothe to take hold at present high prices, anticipating that when the roads dry up hay will come forward freely and prices will be lower. Nevertheless, the better qualities of timothy are being placed readily at quotations. Poor grades are not wanted and are hard to dispose of except at buyers' prices.

No. 1 timothy	$18.00@19.00
No. 2 timothy	16.00@17.00
No. 1 light mixed	16.50@17.00
No. 1 clover mixed	15.50@16.00
No. 2 clover mixed	12.00@13.00
No. 1 clover	15.00@15.50
No. 2 clover	11.00@12.00

Straw.—Demand has shown quite an improvement; there has been scarcely any arriving during the last week and prices have advanced.

No. 1 Oats	$9.50@10.00
No. 2 Oats	9.25@9.50
No. 1 Wheat	9.50@9.75
No. 2 Wheat	9.00@9.25
No. 1 Rye	10.75@11.00
No. 2 Rye	9.50@10.00

Ear Corn.—Ear corn is arriving very sparingly while the demand continues and receipts are not sufficient to supply same.

No. 2 yellow	79½@80c.
No. 3 yellow	76@77½c.

Oats.—Oat market a trifle weak, the arrivals being fully equal to the supply.

No. 2 white	42½@42¾
Standard oats	41¾@42¼
Standard No. 3 oats	40@41¼

NEW YORK HAY MARKET

New York City, May 4, 1914.

Hay prices remain steady in all positions with a fair inquiry noted for the better grades. Receipts were 892 tons. Timothy No. 1, $1.12½@1.15 bale; standard, $1.07½; No. 2, $1.05; No. 3, 90@95c; clover, 60@95c.

The straw market remains steady. Receipts 30 tons. Oat straw, 55@60c; rye straw, 90c.

GRASS SEED MARKET

Toledo, O., May 4, 1914.

Cloverseed.—Prime, cash, $7.65, October, $7.85.

Alsike.—Prime, cash, $10.25.

Timothy.—Prime, cash and April, $2.27½; September, $2.35 bid.

NEW YORK MILK MARKET

New York City, May 4, 1914.

The dealers looked upon the warmer days with which May began as a godsend, for they stimulated the demand. Owing to the lateness of the season many producers have been obliged to continue feeding hay. Hay has become short and the supply of milk has fallen off. Supply and demand at the time of writing are about even.

The receipts of milk and cream in 40-quart cans for the week ending May 2, were as follows:

Railroad	Milk	Cream
Erie	45,607	2,387
Susquehanna	9,437	616
West Shore	18,592	1,701
Lackawanna	57,625	1,845
N. Y. Central (long haul)	82,710	2,342
N. Y. Central (short haul)	12,150	325
Ontario	38,094	3,804
Lehigh Valley	31,875	1,632
Homer Ramsdell Line	2,275	50
New Haven	7,986	210
Pennsylvania	5,642	117
Other sources	1,675	24
Totals	316,688	15,053

ELGIN BUTTER QUOTATION

Elgin, Ill., May 4, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 25 cents.

TOBACCO MARKET

The week was fraught with interest in the new Seed Leaf Tobacco Growers' Company including the delivery of some 150 to 200 acres of tobacco to the company's packing house. Part of this tobacco came in by rail. Mr. Kimbrough, the organizer and manager, and his assistants held meetings at various points, interest in which was even greater than expected. It was recently announced that among the objects of this company would be the providing of packing houses, warehouses and sales floors, the enlightment of growers as to acreage, quality etc., the establishment of trade with manufacturers thruout the world. It aims also to keep in touch with and thoroly inform each individual member of the organization.

There is considerable comment as to the probable acreage of the present year. A few years ago the annual production was some 17,000 acres but recently the production declined about 1,000 acres and now it is conservatively estimated that not more than 13,000 acres will be grown this year.

It is noted that the Burley Tobacco Society of Kentucky which attracted so much attention by its pools, cut out, sensational night rider trouble, litigation, etc., has just made a final settlement with its members and passed out of existence. The final distribution amounted to some $316,000 and Mason County, Ky., received the largest amount showing of course, that this was the leading county in the movement. This society is succeeded by the Burley Tobacco Company, a concern differing little if any from other manufacturing companies and comprising few if any growers among its members.—H. E. Tweed, May 4, 1914.

Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Tonic for Horses.—Regardless of cost I would like to have you give me formula of a good tonic powder for horses and cows. J. G., Penbrook, Pa.—Mix together equal parts ground nux vomica, gentian, ground "red" cinchona and sulphate of soda; give a dessert spoonful at a dose, 3 times a day. Another very good formula is made by mixing together 4 parts fluid extract gentian, 4 parts fluid extract cinchona and 2 parts fluid extract of nux vomica; give a tablespoonful at a dose 3 times a day to either horses or cattle.

Sprained Fetlock Joint.—Several years ago my horse sprained ankle joint and I would like to know what can be done for him. I recently purchased him. He shows some lameness when first taken out of stable, but soon appears to get relief. C. R. J., Schwenksville, Pa.—Clip hair off and apply 1 part turpentine 1 part oil organum, 1 part aqua ammonia, 5 parts olive oil and apply to fetlock 3 or 4 times a week.

Horse Kicks in Stall.—I have a 4-year-old horse that does light work and some road driving. He has a nasty habit of kicking when in barn and on account of this kicking has bruised fetlock joint. How can he be cured of this vice? B. H. T., Newerf, Pa.—The less work he does, the more kicking he will do. Hitching a piece of chain about 12 or 14 inches long to a strap that buckles around leg, either above or below fetlock joints, might prevent him doing much kicking. Changing him from open stall to box might produce the desired result.

Sore Shoulders.—I have a young horse that has done very little work during the winter, but since commencing our spring farm work his shoulders are some sore. I would like to know what to apply. B. K. E., Herman, Pa.—Dissolve ¼ lb. acetate of lead 3 oz. sulphate of zinc and 2 oz. of tannic acid in a gallon of water and apply to shoulders, 3 or 4 times a day. It is important that the collar fit properly and be kept clean.

Cow Bruised Knee.—I have a 3-year-old cow that seems to be perfectly healthy, but has a soft puffy swelling on knee. My cows are kept in a nice basement barn with cement floor and cement feed mangers. This cow has a habit of getting down on her knees and struggling to get hold of feed which works out of feed trough into passageway. N. E. R., Euclid, Pa.—I am afraid you have made a common mistake in building your stable. The back part of feed manger should not be less than two feet high. This would prevent feed working into aisle and causing cow to struggle to get hold of enough fodder. Correct the feed manger and apply 1 part tincture iodine and 5 parts spirits of camphor to bunch every day or two.

Nodular Disease in Sheep.—I have a few ewes that are not thriving as well as they should. One died a week ago. I opened her, found lungs, heart and liver in what I thought a healthy condition, but the bowels looked queer, having a lot of hard bunches on them, filled with a sort of dark colored substance. Have never seen anything of the same kind before and would like to know what caused death of ewe. G. S. R., Bridgeville, Pa.—Your sheep died the result of a parasitic bowel ailment which many of our American sheep have. When in the advanced stages treatment has no effect. Mix 1 part powdered sulphate iron and 9 parts salt and give each sheep a teaspoonful daily. There are good commercial remedies on the market for cure of this disease.

Lice.—My chickens are troubled with lice and simple home remedies that I have applied fail to do them much good. Will you tell me what I had better do for them? N. A. E., Harmonsburg, Pa.—You can safely apply any of the lice powders that are regularly advertised in this paper. Furthermore you should clean your roost and saturate roosting poles with kerosene or 1 part carbolic acid and 20 parts water. Also spray interior of chicken house or whitewash it with freshly made whitewash.

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Headle Dr T J
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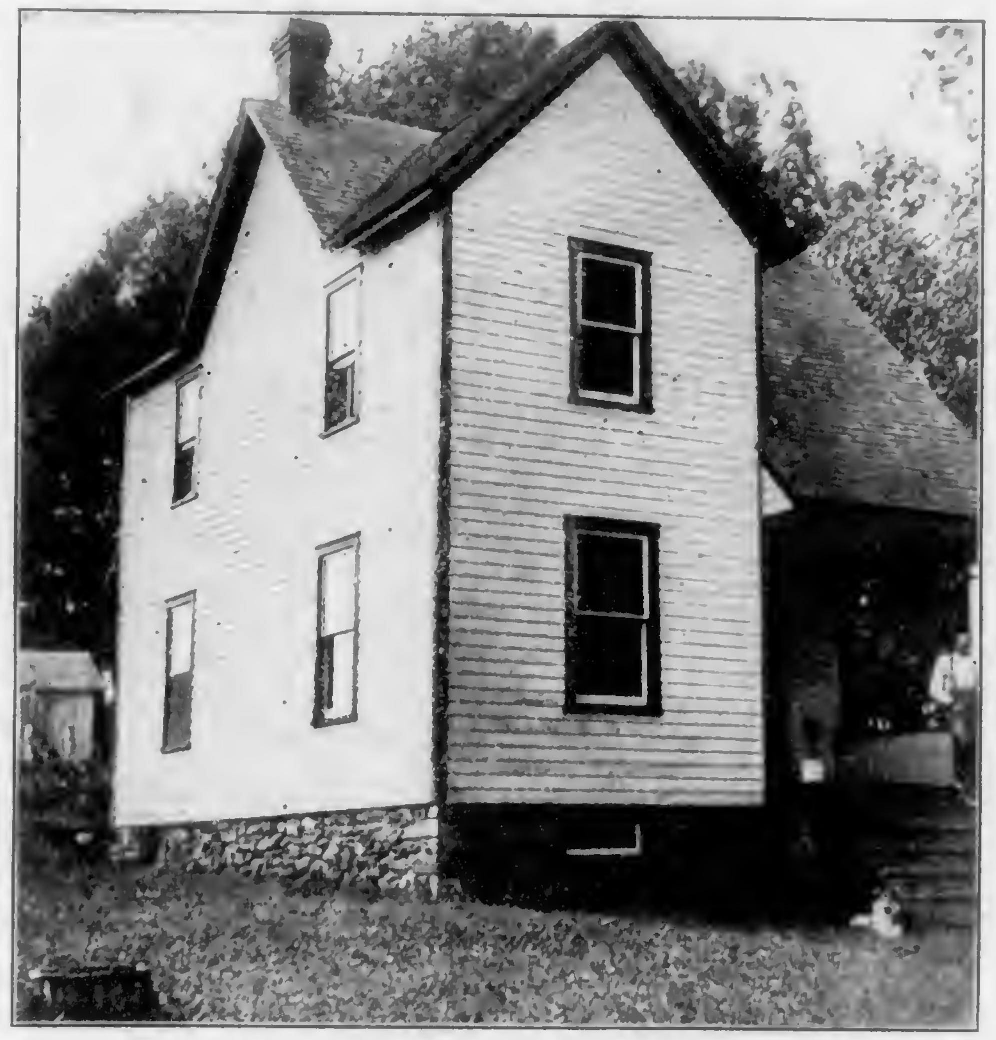
The Tenant House on the Farm

By H. M. Anderson,
York County, Pa.

Probably the most serious problem in farm life today is that of securing competent, dependable farm labor. The producer gets such a small percentage of the consumer's dollar that it is a practical impossibility for him to pay the kind of wages that the manufacturer and other employers of town and city laborers can and do pay. But since a dollar is a dollar, whether in town or country, it is becoming more and more practical for us to pay our men as largely as possible in commodities that are cheaper than money—that is, in house rent, in fire wood, cow pasture, truck patch, etc. But this is one of the less important arguments in favor of the tenant house on the farm.

The principal considerations are that we are able in this way to materially lighten the burden of the farmer's wife, and incidentally have more dependable help; for almost invariably we find married men are better satisfied and less inclined to take offense when no offense is intended. The man who has maintained his own home for a few years and is beginning to gather a family about him is usually a different sort of fellow altogether from what he was in his younger days when he had to have his driving horse and attend all the parties, dances, etc., in the community and was frequently half dead for sleep and always ready at the slightest offense to quit and go off and work for some one else. The married man who lives in your own house, and whose house-rent is a part of his wages usually finds it impossible to get up and go on short notice; he is in a position to lose as much or more than it costs his employer by so doing.

The young farmer and the young lady who considers marrying that young farmer should take into consideration the work and inconvenience of continually boarding farm help, or they probably have breakers ahead of them. I think it is the idea of turning the home into a cheap boarding house that causes many of our best young ladies to hesitate before marrying a farmer. Of course if she loves him enough she will marry him, knowing that she must board his hands, rear the children, raise the chickens, milk the cows and attend to the thousand and one other things that are necessary to keep home sweet and clean and altogether desirable; and we appreciate and bless them for it. But when it is possible and practical to lighten the burden, why is it that more of us do not have the kindness and consideration to do it? There are occasions when it is necessary that the farmer's wife should board extra help, but there certainly should be no occasion for her to board hands three meals a day and 365 days in a year; and we should not ask her to do it.



A TENANT HOUSE ON H. M. ANDERSON FARM, YORK CO., PA., BUILT FOR $1,000.

From the workman's point of view, the house on the farm is just as desirable. He does not have to walk half a mile or even a mile or more, night and morning, and only associate with his wife and family a few minutes in the evening when they are all tired. But he meets them all three times a day and knows just how things are going at home. Again it is practical for him from an economical point of view, for he can keep himself on much less than the increase allowed him because of his boarding at home, and incidentally his family will live a little better and be better in every way. His wife is also in position to add something to the family revenue if she cares to do so. I have always fed a cow for my hand's wife in consideration of her milking one for me, and while this is a very good proposition for her, as she has to go to the stable to milk her own, it is part of our bargain and it suits me as I would not ask my wife to do it and I should hate to do it myself or stop a man from his regular work twice a day to do it.

From the time I decided to ask my wife to marry me I had in mind the building of a house on the farm where the man that I needed the year round could live and board himself. For several years we had almost a surplus of help in the house and when I found that the house help was going I got busy and had a house ready for the man when the need arrived.

The house here shown was purchased from a general mail-order and builders' supply house in August, 1910, at a cost of $623 laid down at my home station. This price included every thing but the brick for the chimneys, the stone, sand and plaster. There was a surplus of material; more than sufficient to build the necessary chicken and hog house. The cost of paint, skilled labor and boarding the same brought the cost up to about $1,000, but I have a house with 7 rooms and a small porch and reception hall that is first class in every respect. This statement is proven by the fact that I have a number of inquiries from working men every fall and winter as to whether the present incumbent is going to stay; and I would always rather talk business with the man who comes to see me, particularly when there are enough of them for me to pick and choose. I think this will always be true that the better the house and surroundings are the better the available men will be.

In locating the tenant house, several things must be taken into consideration. If there is a road thru the farm it should, if possible, be on that road, for the women do like to know what is going on in the community, and then it is so much handier every way than having to cross a field to get to it.

DELAWARE COUNTY FARMERS CATCHING UP WITH WORK DELAYED BY COLD AND WET WEATHER.

Since the man must walk the distance from his house to the barn half a dozen or more times a day, it should not be far from the barn; at the same time it should not be too close to the farm house, as the chickens would probably cause trouble and it is always desirable to maintain the privacy of the home. We want, if possible, to place it on the opposite side of the barn fron the farm house.

My orchards and farm work are rapidly approaching the point where I will find it necessary to keep another man thru the winter, and I hope when the time comes to have another house ready for the man. Altogether, I consider the tenant house on the farm one of my best investments and should not try to get along without it.

PROFIT OR LOSS IN POTATOES

One of the hopeful signs of the times among agricultural workers is the evidence that there is a reaching out after more knowledge of the cost of production. To my mind there can be little hope of extensive co-operation in disposal of surplus until we get at this basic fact and know where we stand. Before me lies a letter from a reader of Pennsylvania Farmer asking "how I figure the cost of growing potatoes and where is to be found the profit,"

Unfortunately, my experimental work is being attempted on small areas and therefore the cost per acre is greater than if engaged in extensive operations. The essential principle may be there, but subject to modifications. It costs me $4 per day for man and pair of horses; $3 for man and one horse and $2 for man. Upon that basis I figure every hour's labor, not realizing why I should toil for less than I pay a helper by my side. If the crop won't pay on this basis it surely should not be considered. Year in and year out, one acre of old sod land is as much as I get plowed with one pair of horses in a day of nine hours. The furrows must be as deep as the subsoil will permit, the ridges even, the angle true, and attention here reduces area covered. I find the items as follows:

Plowing, per acre	$1.00
Preparation	5.00
Seed, 17 bu., rows 34 in. apart	17.00
Planting with machine	2.00
Cutting seed, helping on planter.	2.00
1 ton high-grade potato fertilizer	34.00
Cultivation	5.00
Spraying 5 times, man and horse.	4.00
Insecticide and fungicide	6.00
Digging, picking and storing	12.00
Interest, taxes and insurance	3.00
Depreciation of team, tools and machinery	4.00
Total	$98.00

Complete preparation of the seed bed, to the bottom of the furrow, alone makes possible a full crop. We are told that it requires 250 tons of water to grow a ton of potatoes, and this comes chiefly from the water level. To seize, hold and make available this supply, rising all the while, is the work of the grower and this calls for expense in preparation. Surely the man who marks the strong hills early in the season, watches them thru growth and digs in advance of the field, to reserve the best for seed, is entitled to the price named per bushel. In every other business every item is figured at what it would cost if purchased, which is the only safe way. If one buys reliable seed, true to name, carefully selected, the expense is greater.

Planting in rows, 34 inches, the hills 9 inches apart to control size, will call for the amount named. No man can afford to use low-priced fertilizer; neither can he reduce quantity unless planting on a clover sod. You can not afford to have your roots wasting time hunting for food. Conserve time and energy in plant labor as well as man. With the introduction of a four-row horse or two-row, wheel hand, dust sprayer, the labor item in spraying can materially be cut. With the two-row wheel sprayer, I find I can cover an acre in less than one hour, and thoroly control as well as minimize distribution.

The two items to be criticised most will be those covering taxes, insurance, interest and depreciation, but every one must be met by the grower else how will he find money to pay when the call is made. The farm, if owned, should not only support the family but return interest on the cost. Every item, and very likely others are a legitimate charge against every acre of crops grown, the amount varying according to individual cases.

If the yield be 200 bushels, the cost then will be 49 cents per bushel. If 300 bushels, but 33 cents, and if 350, the cost is reduced to 28 cents. In increasing output then we find the only way to reduce cost. If the crop be dug eighty days from planting, the yield will be far less than if left twenty days longer, provided the leaves and vines are protected, kept green and healthy and the food supply has been ample. With many varieties the yield will double between 80 and 100 days if tops are healthy. For this reason we urge the use of only such agents in spraying as will conserve and cannot injure the life of leaf and stalk. When to dig becomes then a purely mathematical problem to be determined by the individual grower and his market.

A study of chemicals, and experiments with one's own soil, will enable a grower to mix his fertilizers to cut the cost, but never to reduce its value in food elements, save as by the growth of clover one may reduce the nitrogen content.

Frequently as this problem of cost is discussed, one hears the remark—"Well, if it costs as much as that to keep a cow, or grow an acre of any crop, I might as well give up." Yet it has been costing this all the years, only the items have not been figured. Men have been giving of their time and that of their teams, the use of implements and the farm, and counting cost only by what they paid for seed, fertilizer and spray solutions, robbing themselves that they might sell cheaper in the market.

The one great question facing the farmer today is to know the real cost of production. Having this, the next step will be natural, to unite to obtain a living price for all surplus. This last seems to me hardly possible until the first is determined; hence emphasis is laid upon the items centering in the cost of potato growing.—Dr. G. M. Twitchell, Androscoggin Co., Me.

State Regulation and Control of Commission Merchants

By CLYDE LYNDON KING, Ph. D., University of Pennsylvania.

The abuses by commission men, so interestingly described by Mr. Dean in his series of articles on "Commission Merchants and The 35-Cent Dollar", are abuses that abound not alone in Pennsylvania, but in every state in the Union, and in foreign countries as well. The only difference between Pennsylvania and other American states and foreign countries is that the latter have bestirred themselves to secure remedial and corrective legislation whereby such abuses may be minimized if not eliminated entirely.

The commission men, particularly those in the organized exchanges, do not, as a rule, attempt to deny that such abuses exist. They insist rather that it is the farmer who is directly responsible for them because of dishonest packing, and misrepresentation as to quantity and quality of goods. It is to be noted, however, that these very commission men, when organizing themselves into exchanges, take great care to eliminate these abuses, in so far as they may reflect discredit on themselves or do injury to their own business, by subjecting every applicant for membership in the exchange to a thoro-going examination as to his business record and ethics.

Legislation regulating commission merchants is to be justified not only because abuses by middlemen mean lower prices to farmers thru misrepresentations as to time sold, condition in which received, price received therefor, etc., but also because (1) these abuses mean higher prices to consumers (for where standards are not reliable from the farmer to the retailer, distribution costs must necessarily be larger), and (2) because thru these abuses the trade to certain cities definitely falls off from the farmers of certain regions, because the wholesalers of that city do not have the confidence of those farmers. Moreover, the commission business and the handling of produce at wholesale are a vital and essential part of minimum distribution costs. The best elements of the wholesale business must, therefore, be retained.

To date no better method of retaining the good elements in the business has been devised than the enacting of laws such as many American states and certain foreign countries have already put upon their statute books. It is the purpose of this article to describe the essential provisions of these laws.

Fully one-half the American states now have laws on this subject. The significant fact is that practically all of these laws have been passed since 1900. The great majority of them have been passed or extended since 1906. This would seem to prove that not only is legislation of this character needed but that it is soon to be extended thruout all states.

In the development of statutory regulation of the commission merchant the first step was to provide heavy penalties for the embezzlement of farm products by commission merchants. To be sure, no specific statute was needed in order to make such embezzlement a crime, but statutes specifically defining this particular type of embezzlement, and fixing specific penalties therefor, made prosecution easier and the punishment to be affixed heavier and more definite.

Thus many of the states define embezzlement of this kind as "selling, or in any way disposing of, or applying, or converting, for one's own use, with intent to defraud, any bill of lading, custom house permit, or warehouse receipt intrusted to or in the possession of a commission merchant, or any property intrusted to or consigned to" the commission merchant. The penalties for such embezzlement are variously fixed as imprisonment of from one to five years and a fine of from $100 to $500.

But it was soon found that the statutes, to be effective had to do much more than simply define such acts as embezzlement and fix specific penalties therefor. The farmer himself reaps no returns on conviction for embezzlement, especially, as so often happens, if the middleman in question has no property upon which civil damages can be levied. Our states, therefore, are rapidly extending their statutes so as to give the state continuous administrative control over the commission business, and to give the farmer an easy and inexpensive means of seeking redress. This is done by:

(1) Requiring the commission merchant to give a bond, in order that, in case of fraudulent dealings on said commission merchant's part, the consignor may have some financial basis for redress.

(2) Requiring the commission merchant to take out a license. This binds the commission merchant to transact business legitimately, as violations of the prescribed regulations mean revocation of the license.

(3) Requiring that itemized statements be sent to all consignors as to place and time of sale, price received, etc. This minimizes the possibility of embezzling moneys properly due the farmer, and gives the farmer some check on the reliability of the returns sent him.

(4) Prescribing in detail the accounts to be kept by commission men. These accounts are open to inspection by some state official and the consignor. Thru this publicity, false quotations, misrepresentations, etc., are prevented.

(5) Continuous control by the state in order that the farmer or other consignor may have at hand an inexpensive yet effective means of getting all the facts pertaining to the sale of his goods, and a means of securing redress short of the expense of a public trial.

The first essential of all such regulatory statutes is a clear definition as to who commission men are. The statutes of some states (Nebraska, Texas, California, Arkansas, Virginia, Washington, Montana) usually define the commission merchant as "every person, firm or corporation pursuing or which shall pursue the business of selling farm, dairy, orchard, or garden produce, wares or merchandise of any kind upon consignment for a commission."

1. Bonding the Commission Man

To make sure that the commission merchant may not abscond from the state and leave no property behind that which farmers may levy for goods sent him or money due from him many states require every commission merchant before he can legally engage in business in the state, to file a bond of from $2,000 to $20,000. Thus Texas requires that the applicant give a bond in the sum of $2,000. The carrying on of such a business without filing this bond is subject to a fine of from $100 to $1,000.

2. Licensing the Middleman

Other states seek to assure reliability in their commission merchants by requiring them to take out a license. Thus among the states requiring such licenses are Virginia and, for cities of over [illegible], Illinois. In Illinois the license fee is $25. Transacting business without securing such a license is punishable by a fine of from $50 to $200. In Virginia, the license fee is $50 save when commissions exceed $1,000, when the fee is $60, and $10 for each thousand in excess of $2,000.

Many states prescribe both a bond and a license as prerequisites for carrying on the business of commission merchant. Thus Washington requires a bond of $3,000 and a license from the Commissioner of Horticulture. West Virginia provides for a bond of $1,000 and a license. Nebraska prescribes a bond of $2,000 and a license from the Food, Dairy and Drug Commissioner. In North Dakota a bond of not less than $20,000, approved by the Board of Railroad Commissioners, and a license secured from the aforementioned Board are required. In Minnesota a bond of $4,000 is demanded if the license authorizes the sale of grain; and the Railroad and Warehouse Commission may increase bond if deemed necessary whether or not grain is sold. A special license must be taken out if grain is to be handled. The fee for securing a license is $2. These states prescribe heavy penalties, usually fines of from $100 to $1,000, for attempting to do business without such bond and license.

3. Requiring Itemized Statements As To Sale

The statutes in certain states make it the duty of the commission merchant to furnish to his every consignor, immediately upon, or within a prescribed time after sale, a written statement, giving name and address of purchaser, quality and quantity of goods sold, price received, time and place of sale, freight and all other charges, etc. Such provisions are found in Ohio, Nebraska, New York, Illinois and Idaho. The penalty for making a false statement is a fine of from $10 to $100 in Ohio, and a fine of not over $300 or imprisonment of not over six months in Idaho. In Nebraska and in Illinois, failure to render such a statement is prima facie evidence that the transaction was carried on in an illegitimate manner.

The statute of the state of Washington goes still further and provides that, in his statement, the commission merchant must make mention of the fact if the goods were sold below the market price and give reason therefor. This statute also provides that, if the produce is received in damaged condition, and is unfit for sale, or if markets are overstocked, it is the duty of the commission merchant to notify the Commissioner of Horticulture or county fruit inspector and get from him a certificate that said produce is not salable and that it is necessary to destroy it. The certificate is made out in duplicate, one copy being sent to consignor. This effectively stops any fake returns that the goods were not fit for sale.

Other states provide that an itemized written statement shall be submitted by the commission merchant to the consignor only upon demand by the consignor. Michigan and Illinois so provide and make any failure to render such statement prima facie evidence that the transaction was carried on in illegitimate manner. In Delaware, if the commission merchant refuse to render statement on sale of fruit ten days after demand, he is punishable by a fine of from $20 to $100 or imprisonment not exceeding one year.

California requires that a written statement be submitted on demand of consignor, subject to proviso, however, that, unless this written demand shall be made as to each consignment prior to sale, it is sufficient for the commission merchant to set forth only so many of the items above enumerated as he may be able to obtain from the accounts usually kept by him, and that said statement shall not be requested in case the amount of cash transaction was less than $50. Violations of this provision are punishable by a fine of from $200 to $500, or imprisonment of from 10 days to 6 months, or both.

4. Prescribing Form of Books to be Kept

The Washington statute provides that every commission merchant shall keep an accurate and complete set of books containing a record of the amount and character of every consignment received, date of receipt, name of consignor, condition of shipment when received, and when same or any part is sold, name of person to whom sold, amount, date of sale, etc. Similar provisions for record keeping are found in Ohio and Illinois. (In Ohio, the books are open at all times, upon request of any consignor or his duly authorized agent.) It will be noticed that the forms prescribed require such accounts as any fairly efficient firm or merchant ought to keep anyway. The keeping of accounts in prescribed forms not only makes for uniformity but also provides a reliable record in case of suits or questions. All of our railways—state and interstate—and our telephone, gas, street railway, water and other public utilities, are now required to keep uniform accounts open to the scrutiny of specified government officials. Our long history in this field has proved that such regulations are of value not only to the public but to the companies as well; only by this method can both get the information needed for sane and well considered action.

5. Continuous Control by the State

In order to make regulation effective and in order to give to the farmer an informal and inexpensive yet effective means for securing redress, the most progressive of the statutes affecting commission merchants provide for continuous administrative control by the state.

Thus in Washington the books are open at all times and subject to the inspection by any consignor as to any shipments made by him or either on their own initiative or on complaint, by the county fruit inspector or the Commissioner of Horticulture. In Illinois, the Board of Railroad and Warehouse Commissioners has the power to prescribe the system of books and accounts to be kept and these books are open to inspection of the Board or their duly authorized agents. They may send for the books and papers at any time for examination.

Thru this right to prescribe the system of books and accounts to be kept, and to inspect them, and thru the power to grant or refuse licenses, or to revoke or suspend licenses upon the failure of commission merchants to exhibit their books (as in Illinois) the state secretary of agriculture, or some other state official or state board, is given an effective and continuous control over commission merchants—a control just as effective and as much needed as the control of the Interstate Commerce Commission or of state public service commissions over railways and other public utilities.

And what has been the effect of regulation of the commission business? Stability in trade; better standards in grading and sorting goods for under regulation the farmer does not have to engage in sharp practices in order to break even; the doing away with dissatisfaction with the middleman as such. In Washington, in Minnesota, in Texas and in other states that might be mentioned, the commission merchants have come to agree that the laws are beneficial to wholesome reliable trading. And finally, the burdened city dweller sees in such stability of trade, possibilities for lower food costs to him.

In closing, it is well to note that certain foreign countries, notably France and Germany, have made a distinct advance over the American plan of regulation by providing for city-appointed and state-licensed auctioneers for the sale of farmers' goods. The cities then provide public wholesale markets where these goods are sold direct to retailers or groups of consumers, by these licensed auctioneers, at a cost never exceeding 2 or 2½ percent of the gross amount of the sale. This is the next step that will be taken in America if regulation of the above described type does not succeed, or if the commission merchants, thru partisan channels, continue to prevent, as they have thus far in Pennsylvania, the passing and enforcement of proper statutes on the subject.

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Horticulture

HARVESTING ASPARAGUS

Asparagus is the earliest crop harvested by the truck farmer. It brings in money at a season of the year when money is most needed. It also causes much extra work at a season of the year when the trucker has little leisure. However, with proper methods and a little extra help the asparagus can be harvested without causing delay in planting other crops. It is the purpose of this article to discuss methods of harvesting asparagus, considering the work under five headings; viz: treatment of bed during harvest, cutting, bunching, packing and marketing.

Treatment of Bed

Preparation for asparagus harvest begins in the spring soon after the ground can be worked. The bed is thoroly disked for the purpose of the winter application of manure into the soil, and of destroying the woody stems remaining in the ground from last year's growth and also to conserve moisture and hasten early warming of the soil. We do nothing more to our asparagus beds in the way of cultivation until settled warm weather has come, about two weeks after cutting has commenced. The rows are then ridged. A two-horse plow set rather shallow can be used for this purpose; or, if the acreage is large enough to warrant the outlay, a special disk ridger costing from $30 to $35 can be used. In our beds the crowns of the asparagus plants are so deep that we can secure shoots of fair length without ridging. Ridging delays the early growth, and it is the early marketings that return the most money. For this reason we prefer to postpone ridging until the weather is so warm that the throwing up of a bank of earth over the rows will not check the growth. In many fields, however, the crowns are so near the surface that ridging is necessary before any cuttings can be made.

A one-horse weeder of sufficient width to cover two rows at a time is run over the beds during the cutting season whenever grass or weeds show signs of starting. On Saturdays the asparagus is cut closer than on other days in order that it will hold over Sundays without "blowing". Following the Saturday cutting is the best time to run the weeder if the weather is favorable. The weeder should not be used when the ground is wet, not only because it will not kill all the grass and weeds, but because the shoots of asparagus are brittle at such times and many will be broken off. The asparagus shoots are also brittle in early morning while the dew is on them. The weeder entirely does away with hand hoeing during the cutting season but it wears the ridges down considerably so that it is usually necessary to renew them once, about the middle of the cutting season.

The ridges should be almost level at the end of the cutting season. If they are not it is necessary to level them by running the acme harrow over the bed. This destroys as many shoots as two or three more cuttings would remove; hence the unwisdom of ridging just previous to the close cutting season. The middles are stirred with a five-tooth cultivator whenever grass starts, or the walking of the cutters or rain have packed the soil.

Cutting

A few years ago asparagus growers were divided into two classes. One permitted their asparagus to grow so tall that nearly the entire length, necessary for the bunch, could be secured above ground; the other class cut their asparagus just as it was coming thru the ground. The former boasted of quality, the latter of quantity. Arguments were many and good in favor of producing either the "long green" or the "white". Many of the Gloucester County growers seem to have been unable to decide which was the better method, so they "split the difference." The present tendency is to cut all shoots over three inches above the ground. This gives shoots a third or more green.

Regular asparagus knives, with square cutting edges, having blades about 8 inches long and from 1 to 1½ inches wide at the cutting end, are used. Frequent use is made of the grinding stone or file; for dull knives waste much time. The knives are held nearly perpendicular in cutting, so the chance of injuring the shoots not yet visible is lessened. The shoots are cut at such a depth under ground that they will be at least 10 inches long. One jab of the knife is sufficient to cut a shoot. All shoots are cut when of sufficient height, whether they are marketable or not. To allow the little or crooked shoots to grow is worse than permitting grass and weeds to thrive. They sap the storage roots of strength and greatly reduce the number of shoots sent up. As the asparagus is cut it is laid evenly in large hand baskets carried by the cutters. When filled, these are carried to the bunching shed. A man can cut from ten to twelve bunches of average size per hour. Italian laborers are satisfactory for cutting where the acreage is large enough to keep one or more of them busy. For well established beds the cutting season ends from June 15th to 20th. Young beds should not be cut so long.

Bunching

We have given much study to the arrangement of our bunching shed and method of bunching with the result that one man has made a record of 33 bunches per hour, including the cutting of tape, washing and packing of the bunches. Along one edge of the shed we have a table about 8 feet long and 3 feet wide. The operator faces this table. To the right of the table (the end nearest the right hand of the operator) is a box on which a basket of asparagus is set so that the top of the basket is on a level with the table. On the right end of the table two small sticks about 18 inches long, are nailed, 5 inches apart, parallel to the long edge of the table. To the left of these sticks 3 bunchers are set along the table as close together as they can be operated. A large quantity of tape, cut the proper length, is laid conveniently behind the bunchers. Two of these tapes are laid in each buncher before any asparagus is laid in them. The operator removes a large handful of asparagus from the basket, lays it on the cleats with the butts toward him, quickly sorts out the large spears, grading as "Fancy," and places them in the buncher on the right, the one nearest him. He then sorts out those grading as "Prime" and places them in the second buncher. The remainder grade as "Culls" and are placed in the third buncher. Another large handful is then removed from the basket and the operation repeated. As soon as a buncher is filled it is closed, the tapes tied tightly and the butts cut off with a sharp butcher knife leaving the bunch about 10 inches long. As the bunches are removed from the bunchers they are placed in a large tub, containing water to a depth of about 3 inches, placed conveniently behind the workman.

The bunchers we use have a diameter of 4 inches at the base rings and 3½ inches at the rings near the head-board. Repeated counting shows that our "Fancy" grade contain less than 30, the "Prime" grade from 30 to 40, and the "Culls" over 40 stalks per bunch. Some growers make a fourth grade known as "Jumbo" which should not contain more than 20 stalks per bunch.

CURRANTS MAKE A GOOD INTERCROP IN A YOUNG ORCHARD.

The use of cord or raffia for tieing the bunches has largely been supplanted by colored tape. It comes in spools containing 1,000 yards, costing about $1.65. It is somewhat expensive compared with raffia, but it shows off the the bunches of asparagus to such good advantage that the purchaser pays for it many times over. Almost all Eastern growers use the red tape; while the California growers have a preference for the blue. For rapid cutting of the tape into proper lengths, we have two spikes driven into a table at a distance apart equal to one half the desired length of the tapes. From a beam above the table the spool is suspended on a wire so that it will turn freely. A sharp knife is stuck in the spikes. The tape is wound around the two spikes so that the knife remains in the center. As soon as from a third to a half inch layer of the tape has been wound around the spikes, it is cut with the knife between the spikes, cutting from the inside outward. In this way two or three hundred lengths of tape can be cut in a short time.

Packing

Under the heading bunching we left the asparagus in a tub. As soon as this tub is almost filled, the bunches are scrubbed with a hand scrubbing brush and set on a near-by table to drain. Each grade is separated at this point. Care is taken not to wet the heads of the asparagus. If the heads are wet the water collects under the bracts, ferments, and causes a very unpleasant odor by the time the asparagus reaches the market. This is the reason why the asparagus is not washed before bunching so that all, instead of simply the spears on the outside of the bunches, would be washed. After the bunches have been scrubbed they are packed in asparagus crates holding two dozen bunches, each grade being packed in separate crates. These crates are 17½ inches wide at the bottom and 15½ inches wide at the top. They are 25½ inches long and 12½ inches high, outside measurements. The bottoms and ends are solid, the sides and top slatted. They cost about 21 cents in the flat. In making them up, the side, not top is left open in order to put the bunches of asparagus in. The bottoms of these crates are covered with a one-inch layer of sphagnum moss that has soaked over night in water. It holds enough water to keep the asparagus fresh for several days. Large bales of this moss can be bought for $2 per bale.

Marketing

We find Boston to be one of the best markets for our fancy and prime grades. The culls also find ready sale there before the Massachusetts asparagus enters the market. When this occurs the culls are sold in Chester or Philadelphia where the shipping expenses are not so great. Shipments to Boston are made by express. We use the telephone and mails, try to keep posted on the condition of the various markets, and try to sell our asparagus in the best market.

One or two growers are reporting success by packing their asparagus in crates holding but a dozen bunches and selling direct to consumers. This is a plan of marketing that needs developing and it may pay many growers to study the needs of the consumers and methods of supplying them direct.
—Harris T. Kille, Gloucester Co., N. J.

APPLE GROWING IN NEW JERSEY

At the present time New Jersey has about 1,500,000 apple trees of bearing age. Of these nearly 200,000 are in Monmouth County, with Burlington County second and Gloucester third. There are probably 500,000 trees of non-bearing age which will come into fruiting within a year or so. Had farmers of a few years since realized their opportunities, there would have been at least 5,000,000 trees in bearing.

Conditions were never more favorable for commercial apple production than they are at present. The prevailing soils found in the coastal plain region are sands and silt loams which have proven particularly conducive to the production of fruit. Just North of this plain region is a low Piedmont section. In many parts of this district apple trees grow vigorously and bear profusely.

With the markets of many large cities on either hand, it is no wonder that summer apples are proving the most profitable. There is less competition in the apple market during the summer, because many summer varieties will not stand long shipment. This fact prevents apples from being shipped from the West and South to large Philadelphia and New York markets to compete with fruit grown in New Jersey. The increasing demand for high-class fruit at the sea-shore resorts is another factor contributing to profits from summer apples grown in the State.

Despite the fact, however, that soil, climate and markets are all favorable to apple production in the State and that nearly half a million trees are soon to come into bearing, there are not as many apples produced in New Jersey as there were thirty years ago, the reason for which is not fully apparent. The competition of the great West and Northwest has had something to do with it, as has, also, the difficulty of raising apples because of scale and other diseases requiring spraying.—D. T. H.

FLOWERS

The sweet pea trench should have been dug last fall, or the soil deeply spaded, then poultry manure applied after the first freeze. As early as possible stir this well, then furrow several inches deep and plant the seed, covering between one and two inches deep. As fast as the plants grow keep the soil filled in the furrow, thus enabling them to secure a deep root growth which is very essential to a strong growth of vine and abundance of flowers. Cultivate often, but not deeply and in severe drouth, be prepared to water abundantly.

Procure dahlia tubers early and start in a spent hot bed or a cold frame. Have the bed or row deeply spaded, and well enriched. Dahlias like lots of water when buds are forming. The suds of weekly washes seem to suit them finely. Wood ashes improve the soil for dahlias. They may be grown successfully from seed, but the seed should be started early, and kept growing, else frost will get most of the buds.

Unless well prepared for starting them, it is best to procure Cannas already started. Don't have them arrive until May. While waiting for the plants, dig the bed very deeply, at least to the depth of a tile spade, and enrich the soil well with stable manure. Place the plants three feet apart, and don't ever let them suffer for water. Good drainage is necessary to a good growth of any plant, especially the tuberous-rooted sorts. Unless naturally well drained, place a layer of coarse gravel or broken tile in the bottom of the bed. For varieties of Canna use Robusta for center, Allemania, Pennsylvania, Austria, Italia and Mrs. Kate Gray for the edge if you desire plants six to eight feet tall with large orchid-like flowers. Robusta is a dark, large-leaved plant that should not be allowed to bloom, as the bloom is inconspicuous. Such a bed makes a fine display. A mulch of stable litter aids them after the growth becomes too thick to allow of cultivating.—E. Clearwater.

Brown-Tail Moth.—Recent appearance of the brown-tail moth on parts of Long Island, N. Y., has revived interest in the study of this pest. Quite timely, therefore is the Connecticut Experiment Station Bulletin No. 182, which discusses its history, its injuries, means of spread, life history, its parasites and its control measures. The Bulletin is mailed from New Haven, Conn.

The Home Vegetable Garden.—Every farmer, vegetable gardener and trucker should find Bulletin No. 10 of the Virginia Truck Experiment Station mailed from Norfolk, Va., of intense interest. This bulletin treats of soils, location, fertilizers, crop rotation, seeds, hotbeds and cold frames, sowing seed, care of seed bed, setting plants in the field and cultural directions, in connection with vegetable gardening, and is an excellent bulletin for use as a library reference.

The American Peach Orchard.—By Prof. F. A. Waugh, Professor of Horticulture, Massachusetts Agriculture College. 238 pages, 5x7½ inches. Illustrated. Published by Orange Judd Company. For sale thru Pennsylvania Farmer. Price, $1.00.
Peach growing is an art in itself. Specialization in all fruit growing has become so general that each class of fruit stands out as a separate industry. This book is essentially a sketch of the practice of peach growing in this country at the present time. It presents the thought and experience of growers in different parts of the country, and the practice and methods that have become standard in the production of highest quality fruit.

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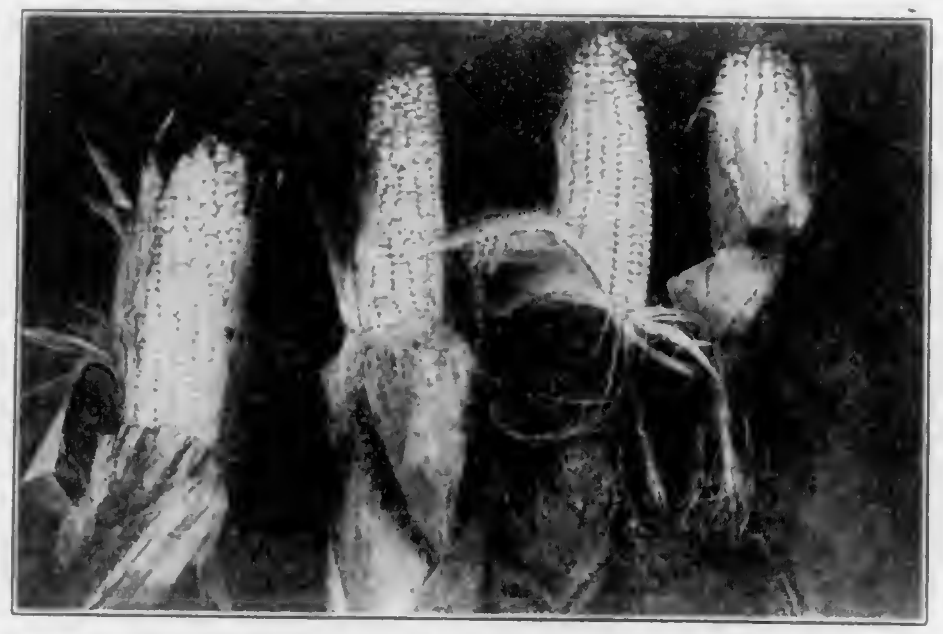
The Dairy

GROWING SILAGE

There are good reasons for plowing the corn ground on which manure was applied during the winter, as early in the spring as it is in condition to work. Harrow frequently, preferably with disk or cut-away harrow, until planting time. This pulverizes the sod incorporates the manure with it, and aerates and warms it by letting the air and sunshine thru it. Such a soil conserves moistures better and forwards the crop. The writer's time for planting corn is when the trees are in full leaf, and the soil feels warm to the hand. The question of early planting seems to be a matter of acclimated seed.

FIELD OF CORN AND SOY BEANS SOWN TOGETHER FOR SILAGE.

When attending a meeting of the Northern New York Corn Growers' Association, I heard this statement from a member, "I planted commercial seed corn and seed corn I had grown on my own farm, and acclimated, both at the same time, in the same field. Every kernel of the commercial seed died, and every kernel of the home-grown seed germinated and grew." The time has come when the progressive farmer must give more attention to developing his own work on his farm, strains of seeds suited to local soil and climatic conditions. In corn culture this means the maintaining of a plot of corn for growing seed. Probably on the average farm one-half acre is not too much. The kind of corn to grow on this plot for ensilage is the largest that can be depended upon to mature to the glazing stage.



EARS LIKE THESE ON ENSILAGE CORN ADD VALUE TO THE SILAGE.

It is a matter of history that in the Eastern states above the latitude of New Jersey, the earliest of the dent corns, as Pride of the North, have not reached this stage of maturity more than three years out of five, and for this reason, the largest of the flint corns, or possibly a cross between a dent and flint is safer to select for the seed plot. It should be understood that the value of ensilage consists in its digestible nutrients, and as some one has said, "It is too much work to water our cows with a bushel basket," as when feeding immature corn stalks. After getting the best variety of corn to start with, this may be improved year after year, by selection of the most perfect ears. A stimulus to such work is a local corn growers' association.

The dairy farmer should investigate the subject of soy beans, and learn about the best variety that will ripen with his variety of corn. No farmer can afford not to grow soy beans with ensilage corn, and I know that a few New York farmers grow corn and soy bean ensilage that is so nearly a balanced ration that but little grain is fed with it. In at least one case the dairyman feeds no grain with his corn and soy bean ensilage, and is getting very good results. The Medium Green soy bean is most generally grown for the silo, but information about varieties that will ripen with a particular variety of corn can be obtained of state agricultural colleges and experiment stations. The writer plants 8 quarts of seed per acre, about one-third of which is soy beans, and thins the corn where too thick to prevent the growth of the beans. The seed can be evenly mixed together and planted with a horse corn planter.

When planting corn it should be drilled in rows sufficiently far apart to admit of horse cultivation until the corn has nearly made its growth. To do this 3½ or 4 feet is not too far apart if the stalks stand perhaps one foot or so apart in row. Thoro and clean cultivation means very much. Growing corn in a rotation on the dairy farm is the only opportunity to destroy perennial weeds, as paint brush, dandelion, plantain etc. Right here is the preparation of the soil for growing alfalfa, and the writer knows absolutely, that any soil, well-drained and of fair depth, can be prepared in this way so alfalfa can be grown in it without failure if all the requirements of the plant are complied with.

As soon as the corn is planted, start the cultivator. Put the teeth down deep for the first two or three weeks, then more shallow until two or three inches of the surface soil is only stirred, leaving a finely pulverized dust mulch. This method of sub-irrigation will produce a good crop of corn in a season of severe drouth. With straight rows tho cultivator can be run close to the line of corn plants, but all weeds that cannot be so reached should be hoed out, for as has been said, this means success with alfalfa which is an end toward which all dairymen should work.

Before the last cultivation of the corn, sow between the rows a mixture of vetch, cow horn turnips, if you wish to grow the latter, and a very small proportion of rye. This with favorable conditions will make considerable growth during the fall. It will grow even in cold weather, if the ground does not freeze, and will start growing early in the spring. When a few inches high in the spring it should be plowed under, making a cheap source of humus and plant food.

The most profitable time to feed ensilage is when the pasture begins to fail, after mid-summer. Cutting soiling crops every day is not pleasant or profitable. Probably they will be immature and too watery. After planning for the winter supply of ensilage, plan for about two acres more for a dairy of 25 cows, and a special summer silo, which need not be opened until the ensilage is wanted.

AMONG THE MILK PRODUCERS

Conditions Not Promising

Farming in the dairy section of New York seems slightly at a discount just at present. It may not be more depressed than farming elsewhere, for to the best of my judgement the business is not very prosperous. Other business is considered slack also, consequently we cannot lay all the blame on farming nor on the milk dealers. For several years seasons of growing have been dry in many sections, and this has been especially true of our dairy section. One well-informed man told me not long ago that it will take two or three years of good fortune to bring up many of our farmers to the point where they were two years ago. Last season was exceptionally bad. For all that, I know many farmers who made a little profit, even last season.

Just now there seems to be quite a strife to get what hay is needed to carry out the stock to grass. I do not think there will be any necessity of bringing in hay from other quarters, but considerable hay is changing owners. Feeds are rather high, altho not so high as in some years. I would think that grain feeds are lower by 3 to 5 percent than the average year for five years. Hay is bringing its top price for several years, that is $15 a ton at the barn where sold. Milk is off fully 5 percent, and requirements as to the cost of production are rather more exacting. I do not think that there are as many dairymen being shut out of the markets, but inspection is more effective than formerly. In other days inspectors thought they had to turn down a man occasionally in order to show that they were doing something. There is some of that even now, but we seem to be nearer real inspection of an educative type than in former days. It costs money for the farmer to meet the requirements all the same, and he is not getting paid for it.

Milk is being graded in some instances, but it is done in a peculiar manner. It may be the best that can be done now altho it seems strange. A creamery shipping milk to the New York city market may take in as many grades as they are amind to, but can ship only one to the city. In some localities "A" milk is shipped while in others it is "B", or some other. If the milk is to be "A", no "B" milk can be shipped. In certain cases the dealers who want to ship "A" milk pay a bonus for temperature and for bacterial count. If milk is cooled to 58 degrees and so delivered, the dealer may pay 10 cents a hundred extra for it, and if the bacterial count is kept below 100,000 another 10 cents is paid. This plan is the right one, if carried out properly. These payments are in addition to 10 cents for 3.8 percent fat, and 10 cents for a barn score of 68 points. This 40 cents above the flat price is not so bad if the inspection is fair. That means June milk at $1.40 per hundred pounds.

Now hold on a little before you say that dairy farmers are in clover. The number that have a chance to get any such return as this is exceedingly small. Not many stations are trying to run as "A" plants. When they do it is expense to the dairyman who gets the price. I am not certain whether there is profit in "A" milk at that price. The idea is the correct one if enough is paid and not too much exacted; and if there is an opportunity to sell. It will be seen that the man who sells ordinary milk of rather low test, even when he is under inspection, gets only $1 a hundred for June milk. It strikes me that more of this milk is sold than of any other sort. That means an average of 3 cents a quart or less the year round, and that price will not pay expenses unless the production is 6,000 pounds per cow, or something like 40 percent above the average production.—H. H. Lyon, Chenango Co., N. Y.

Dairy Inspection.—A meeting of Gov. Glynn's milk commission held recently was well attended. Practically all members of the commission present approved of the plan for state wide inspection of dairies furnishing milk for city and village consumption. Dr. McMillan of New York City department of health approved the plan with the restriction that the city should control the milk stations. On the question of pasteurization there was a difference of opinion as to whether milk should be pasteurized immediately after being drawn or at large plants for the purpose in the city. It was the opinion of those present that the milk now being shipped there is of a poorer quality than formerly and that prices will have to be raised to insure keeping the standard up to the requirement of consumers.

May Rilma Beats All Records

On April 8th, this wonderful Guernsey cow completed a year's test, giving 1,059.55 lbs. Butter Fat on Chesterbrook Farm at Berwyn, Pa. Owner Capt. E. B. Cassat. Sup't. R. A. Colgan.

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Green Mountain Silos will help your herd to produce more milk. The lumber is thick and carefully selected; the hoops are very strong, and the most convenient of all doors are used. Write today for catalogue.

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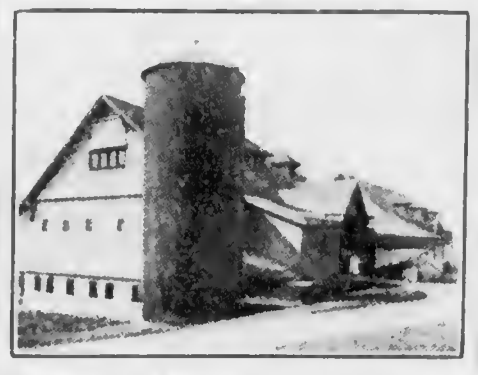

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Built of hollow, vitrified clay blocks — protects silage from moisture, heat and cold. Steel bars reinforce each layer of blocks. *Weatherproof, decayproof, fireproof.* No painting — lasts a lifetime. The most attractive and economical silo. *First cost the only cost.*

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strongest built, simplest to put up and easiest operated on the market. Adjustable automatic take-up hoop—continuous open-door front—air tight door and permanent ladder are some of the unusual features. The International Silo Co., 118 Main St., Linesville, Pa.

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DE LAVAL as superior to other separators as other separators are to gravity creaming

WHY STOP HALF WAY IN BUYING A CREAM SEPARATOR?

THE ABOVE HEADING SUMS UP the cream separator case, as it concerns every prospective buyer of a separator and every user of an inferior separator, in as few words as it could well be put.

OTHER SEPARATORS SKIM cleaner than is possible on the average with gravity creaming, and De Laval Separators skim as much closer still than other separators, particularly under the harder conditions of cool milk, running heavy cream or separating the milk of stripper cows.

OTHER SEPARATORS PRODUCE A cream superior to gravity creaming, and De Laval cream is smoother, less frothy and so much better than the cream of other separators that De Laval made butter always scores highest in every important contest.

OTHER SEPARATORS SAVE TIME and labor over gravity setting or creaming of milk, and De Laval Separators by reason of their easier turning, greater capacity, easier cleaning and easier handling save a great deal of time and labor over other separators.

OTHER SEPARATORS SAVE THEIR cost every year, as a rule, over gravity creaming, and De Laval Separators save their cost every year over other separators and last from ten to twenty years, or on an average five times as long as other separators.

DE LAVAL SEPARATORS COST A little more than other separators, but very little, and they soon save that small difference and go on saving it every few months, as other separators would go on wasting it, for all the years they last.

WHY THEN BUT HALF SOLVE THE problem of best results and greatest economy in dairying by the purchase of an inferior separator or go on dairying with this important problem but half solved if you are already using an inferior separator that you might so easily replace with a De Laval?

THE SEASON OF GREATEST PRODUCTION is now at hand when all these differences count for most with every user who should have a separator and is trying to get along without one. No other dairy question is of anywhere near as great dollars-and-cents importance.

WHY NOT SOLVE IT NOW IN THE only sure and safe way possible? If you haven't a separator, buy a De Laval. If you have a poor separator, replace it with a De Laval. If it is not convenient to pay cash you may buy a De Laval on such liberal terms that it will actually save and pay for itself.

Every De Laval local agent is glad of the opportunity to prove every claim here made. It will cost you nothing and may save you much to give him the opportunity. If you don't know the nearest De Laval agent simply address the nearest main office, as below.

The De Laval Separator Co., 165 Broadway, NEW YORK; 29 E. Madison St., CHICAGO
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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THE PROMISE OF MAY will be worth more if you purchase a few good HOLSTEINS

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REAGAN BROTHERS, DISSOLVED
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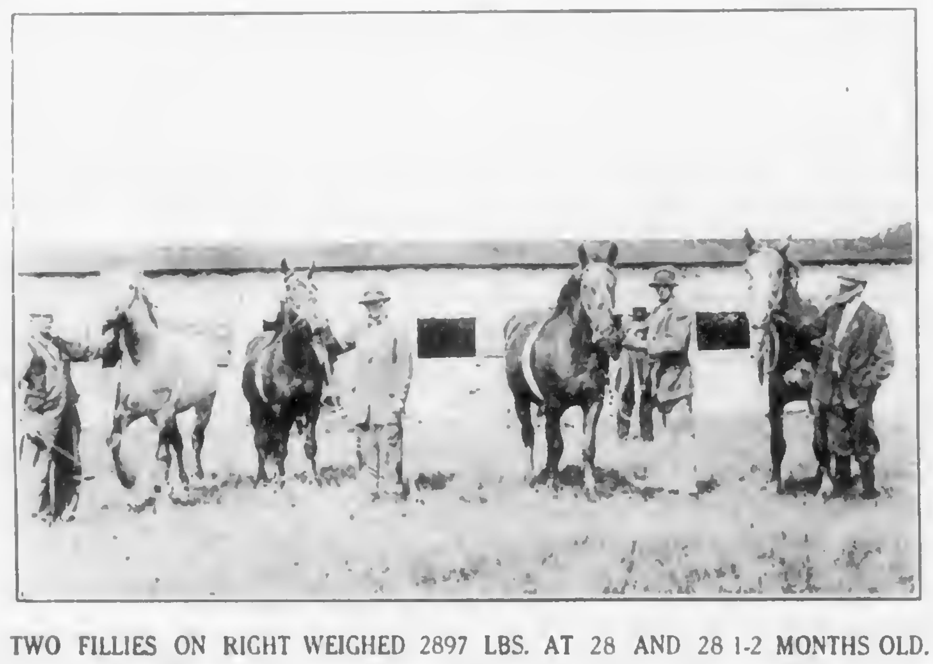
Live Stock

AN OBJECT LESSON IN HORSE RAISING

During our travels over Pennsylvania doing farmers' institute work we meet with some very interesting lessons. I often wish that they could be carried home to the many who need them. One that impressed me very much was the way Mr. Geo. Richards, of McKean Co., Pa., is availing himself of the high priced horse market. He is growing a good grade of colts from good quality, heavy mares and a purebred Percheron sire. He is not attempting to grow anything but good-sized, good-quality workers. Mr. Richards knows the value of feed to a growing animal and when to give it to him.

Just before we were there in February last, Mr. Richards had sold two colts, 28 months old, not as a pair but to separate buyers (farmers in his own community) for $300 a head. He thought he had done pretty well. The two weighed 2,897 lbs. and when he found he had received almost 21 cents per pound for them and only about 16 to 18 cents per pound for his poultry, colt raising looked better than ever to him. He has several more colts just as good as the two sold and will likely do as well with them. His success is the result of good judgment in selecting breeding stock for both size and quality, and then feeding and caring for the young colt at a time that insures the greatest growth and strength. There is a great difference between the result of feeding for growth and strength and merely keeping a young animal alive and praying for growth, as is too often done. I do not know how the same feed and care could have be used to so good advantage in any other way. Do you?



TWO FILLIES ON RIGHT WEIGHED 2897 LBS. AT 28 AND 28 1-2 MONTHS OLD.
Sold for $600. Their Sire Shown on Extreme Left. Owned by Geo. Richards, McKean Co., Pa.

The two colts on the right in the accompanying illustration are the ones sold for $600, and the gray horse on the extreme left is their sire. Right now is the right time to look around and select some good breeding stock and start in to raise your own horses. Stop paying [illegible] cents per pound for your work teams to some one out west to do it for you. We can raise as good horses and just as cheaply in Pennsylvania as any place in the world if we use good judgment in selection, and use nerve and common sense in feeding.—Dr. M. E. Conard, Chester Co., Pa., Farm Adviser in Dairying and Animal Husbandry.

FARROWING HOUSE FLOORS

The individual farrowing cot without a floor is just about two-thirds of a house. It ought to take but a single spring like the present one to teach any farmer this fact. Besides the warm and dry effect of the floor the house stands the wear and tear of moving much better if taken on its own runners than if tumbled upon a sled and off each time it is necessary to move.

If distant from the straw supply the bedding of these coops is very likely to be neglected. If placed directly upon the ground the bed is often damp and uncomfortable in a few hours, and often becomes thoroly wet in a day or two. Even in wet and rainy weather our small houses have often gone weeks even without fresh bedding, and at the same time remained much more comfortable than could a house with bed laid directly upon the ground. The recommendation of these small houses is their ease of movability, and this causes them often to be moved far from the supply of straw. I believe that in their original construction they should be so made as to require the least carrying of bedding and the greatest comfort to the pigs under adverse conditions.—Geo. P. Williams, Delaware Co., O.

RAISE MORE HORSES

It is better to raise two colts at a time than one, if you can let the colts run together. Feed the colt well all the time for no animal will make better use of it in growth. Give the colt a very liberal grain ration and do not try to winter him on roughage. If you do justice to the colt it will cost you as much to winter the colt as a full-grown horse. We want to raise a horse in which is a lot of surplus power. This inbred characteristic, brought out by right feeding and care, constitutes the value of the horse, both on the farm and for the market. Vitality and conformation are qualities to work for in raising the farm draft horses.

Farmers should breed only good mares if they want good colts. In fact, the quality of the mare is almost as essential as that of the stallion. Farmers should keep only mares on their farms to do their work, and sell all the geldings for other uses. Your mares will do your own farm work and earn more for you while you sleep, raising colts. Two good brood mares should return you $500 annually in colts sold. The West has reached a place where it will soon use all the horses they grow and we must expect higher prices for good horses.—S. J., Crawford Co., Pa.

MARYLAND FARMERS' DAY

The second annual Farmers' Day will be held at the Maryland Agricultural College, College Park, Md., May 30. The event will give visitors an opportunity to observe experimental work at the state experiment station and study results. A special program with many attractive features is being arranged. Special railroad rates will be given.

Flying Dutchman Hay Loader

The One-Man Loader

No Ropes
No Chains
No Cogs
No Gears
No Delays

With this Loader, one man can put on a good, even load of hay, in practically the same time that it would take two men with other loaders.

The Flying Dutchman loads hay, clover or alfalfa without "chewing it up" or threshing out the seed.

It operates with the long, easy, natural stroke of the hand rake, elevates carefully and loads it on the wagon in excellent condition.

Works on an entirely new principle that does away with all cams, drums, chains, sprockets, rope webs, gears and trouble.

Light Draft and Long Life—There's nothing to wear out or get out of order, and the extra long stroke does not pound the machine to pieces.

No Clogging—The yielding deck effectually prevents clogging. Heavy or light hay, swath or windrow can be handled without any adjustment.

All-Steel Frame—It cannot warp, sag, rot, nor get out of shape.

Many ADRIANCE Mowers In Use 40 Years

Are giving excellent service today. No other Mower has such a record because none is so well built.

Adriance Mowers have nearly 60 years of the hardest kind of service back of them.

They are the best made—simplest in construction—lightest draft—most powerful—need fewest repairs, thousands of users will testify.

Adjustable carrying springs take weight from center bar and put it on the wheels, greatly reducing draft and increasing traction.

Cutter Bar follows the ground no matter how uneven it may be.

Automatic spring draft prevents damage to machine, driver or team in case obstruction is struck.

Forward acting, natural position foot lever makes ideal foot brace in controlling fractious team.

Many other strong Adriance features explained in our FREE BOOKLET. Write for it today.

Your Flying Dutchman Dealer sells Adriance Mowers, Flying Dutchman Hay Loaders and complete line of Flying Dutchman Farming Implements. See him.

Moline Plow Co.
Dept. 152 MOLINE, ILL.

400,000 Settlers a Year

Immigration figures show that the population of Canada increased during 1913, by the addition of 400,000 new settlers from the United States and Europe. Most of these have gone on farms in Manitoba, Saskatchewan and Alberta.

Lord William Percy, an English Nobleman says:

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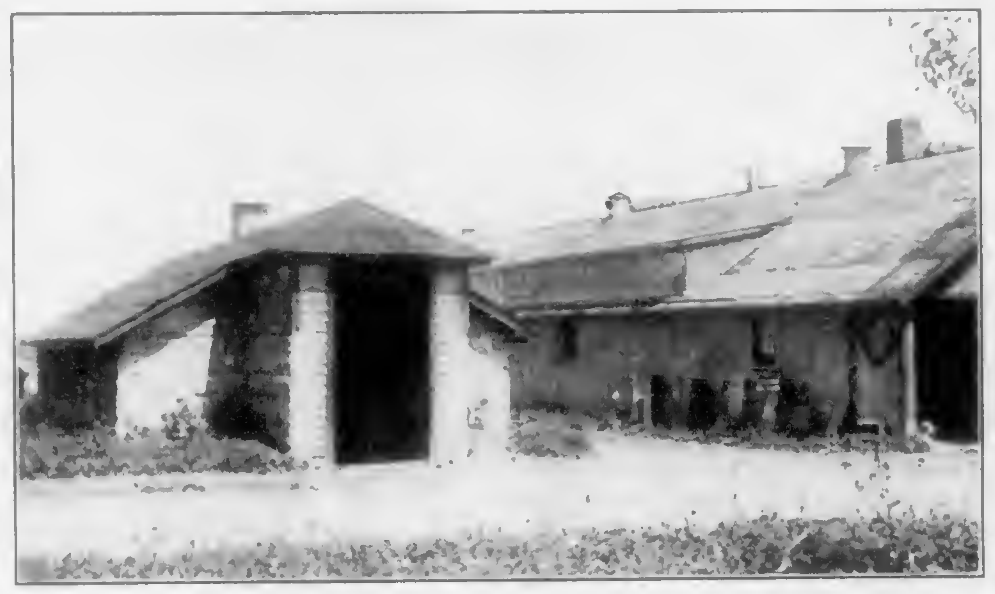
Poultry

WHAT CAUSES INFERTILE EGGS

Confinement is one of the frequent causes of infertile eggs. On a good many farms the chickens are kept in confinement. Why this is so I have never been quite able to understand. The serious part is that some farmers are trying to keep their poultry under plant or factory conditions, when there is no reason why they should do this. They have the land and all they have to do is to open the gates and doors wide. Free range breeding stock always produces a much better fertility and stronger chicks than confined stock. Another cause of infertile eggs is inbreeding, unless this be carefully practiced. By far the safest method for the farmer to follow would be to introduce unrelated stock each year thru purchasing a male bird, of known breeding and unquestionable stamina. As a rule this last factor is very much neglected on the average farm.

To show the importance free range plays in producing fertile eggs I might relate an experiment as conducted at the New York State Agricultural College. A pen which was producing eggs 10 percent fertile, in confinement, was placed on a large free range, the doors kept open, and inside of a week these same hens were producing eggs 80 percent fertile, with an increased percentage in hatchability.



HATCHING CELLAR AND HOG HOUSE ON FARM OF H. O. HOLCOMB, CRAWFORD CO., PA.
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Hens worried with lice and mites, can not and do not produce fertile eggs.

Excessive feeding of wet mashes has a tendency to cause infertile eggs. Overfeeding has a tendency to make the breeders lazy and sluggish, which invariably means infertile eggs, and weak chicks.

Exercise is of paramount importance in the successful management of breeders. The more they are made to work for their living the better the eggs will be in fertility, and hatching power. Lack of exercise and overfeeding of breeders invariably causes a large percentage of infertile eggs and weak chicks.

The improper feeding of green food, either too much or not enough, is very often the cause of eggs low in fertility and those that do hatch often prove weak and unprofitable. Insufficient green food especially has a tendency to cause a large percentage of infertile eggs. Too much green food causes eggs with an excessively watery yolk and such, even tho they are fertile, seldom hatch. Breeding stock which during the winter has been forced for heavy winter egg production, does not as a rule, produce strongly fertilized eggs in the spring and those that do hatch are invariably weak and difficult to bring to maturity.

Sometimes male birds for different reasons will get in poor condition. This is another very frequent cause of infertile eggs and weak chicks, as is also the allowing of constitutionally weak male birds to head a flock of breeders. Weak breeding stock always produces eggs low in fertility, hatching power, and weak chicks. Too many females to one male may also contribute to infertility.

Fertility is not always a very reliable way of judging the value of eggs for hatching, because altho the fertility of the eggs may be good, their hatching power may be very low, thus producing a very low percentage of chicks, and the actual number of chicks is what counts.

In various experiments conducted at the New York State Agricultural College the following were some of the results obtained. Where pullets were on grass range the percent of fertile eggs was 73.60; of fertile hatched, 97.40; of number hatched to number set, 71.70; of chickens reared to number hatched, 92.60. Where pullets were on bare yard the percent of fertile eggs was, 98.50; of fertile hatched, 50.20; of number hatched to number set, 49.50; of chickens reared to number hatched, 80.80.

Diseased breeding stock of course invariably causes a great percentage of infertile eggs, as does also breeding stock which tho seemingly perfectly well at breeding time has passed thru some hard and vigor-sapping disease. For this reason it is unwise to use any such stock for breeding purposes.—F. W. Kazmeier, N. Y. State Agri. College.

NEW BOOKS

Success With Hens.—By Robert Joss, 234 pages, 5½x8 inches. Bound in cloth. Published by Forbes and Co., Chicago, Ill. Price, $1.00.

This is a clear, practical and up-to-date guide to poultry raising. The book contains 55 chapters covering in detail the various branches of farm poultry work, including incubation, feeding and housing, increasing the egg supply, cure of diseases, marketing of eggs and fowls.

Management and Breeding of Horses.—By Prof. Merrett W. Harper, professor of Animal Husbandry, College of Agriculture, Cornell University, 465 pages, 5½x8 inches. Illustrated. Bound in Cloth. Published by Orange Judd Company. Price thru Pennsylvania Farmer, $2.00

Management and Breeding of Horses is a farmers' hand book on judging, feeding, breeding, care and management of horses. It gives the history and description of each of the breeds of horses and discusses practical points in handling in a concise, readable style easily understood by any farmer horseman. Chapters on principles of horse breeding, the brood mare, the foal, fitting for farm and market, practical feeding, training horses and common ailments, make the book of value to all horse owners. The book is illustrated with 175 cuts from natural photographs.

Anti-Saloon League Year Book, 1914.—By Ernest H. Cherrington, Editor of The American Issue, 214 pages, 5x7 inches. Illustrated with charts and diagrams. Bound in paper or cloth. Price in paper, 25 cents; in cloth, 50 cents. Published by American Issue Publishing Company, Westerville, O.

This is the seventh annual edition of this publication which is an encyclopedia of up-to-date facts and figures dealing with the liquor traffic. It gives comparative statistics of manufactures, crime, pauperism, insanity, industrial conditions, etc., in prohibition and license states.

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Philadelphia, Pa., May 16, 1914.

TALKS WITH OUR READERS

Pennsylvania Farmer is edited for its readers. Its circulation is concentrated in a limited area of similar conditions and similar problems. We are trying to give our readers the information, the news and the discussions that are most useful to the farmers of this circulation area. In doing so we must be guided to a large extent by the requests for special articles or discussions that come to us from readers, and by comments on subjects already taken up. We always welcome suggestions on ways and means of making the paper more useful to you; and you means every subscriber, whether old or new. If you have question on practical or technical farm practice that are troubling you, send them in and we will submit them to an authority for reply, thru our columns. That is the business of the special correspondents on our staff. If you have questions concerning the policy of our paper, the whys and wherefores of subjects discussed or subjects that ought to be discussed, send them in and we will try to answer them. That is our business in which you have a legitimate interest as a subscriber and a patron.

Service Bureau Announcement has been made of the formation of the Philadelphia Agricultural Service Bureau, with a controling committee of seven members. Among the announced duties of this committee are the following: "Work in harmony with Pennsylvania State College, the experiment stations of New Jersey, Delaware and Maryland and U. S. Department of Agriculture; supply agricultural information to growers and producers and place farmers in communication with responsible distributors; assist banks and financial institutions in development of agriculture in their particular section by arranging for meetings, supplying speakers, etc.; recommend methods of standardizing farm products from seed to packing; stimulate interest in farm bureaus and urge their establishment in all communities; provide means for exchange of information both as to supplies for the farm and produce for the Philadelphia market, and increase efficiency of the farmer, reduce cost of production and add to the size of the crops." This is a rather formidable array of "duties" and it is evident that the seven members of the committee, if they expect to fulfil these duties, will have an exceedingly busy time. Perhaps it is fortunate for the committee that some of the prescribed duties are so indefinitely defined as to mean practically nothing. Others, however, are of real vital import to both farmers and city consumers and if seriously administered will more than justify the existence of the bureau and will make it a real "service" institution. With the tardy, but nevertheless increasing, interest in direct marketing and direct purchasing of farm produce there is need of some sort of bureau to keep both producer and consumer informed on market conditions and requirements. During the past week we have had a number of inquiries from farmers who have arranged to market produce direct by parcel post, asking where current retail quotations can be obtained regularly. This information, quite necessary to a satisfactory system of direct selling, is not at present available from a thoroly reliable source. The Service Bureau may find a ready demand for its services in supplying such information thruout the territory it seeks to cover. Its recommendations on standardization of package, quality and grade of goods should also be a welcome service. Farmers are accused of fraudulent and deceptive grading and packing. The condition of goods reaching market often gives grounds for such accusations, but this condition is as often due to lack of knowledge of market requirements as to an intent to defraud. The Service Bureau may be of immense service in establishing grades and defining standards. Its value in both of these services, however, will depend upon its fairness in dealing impartially and justly with both its country and its city patrons. It must first gain the confidence of the people whom it seeks to serve, and if it does this by opening a way for a safe and unhampered transmission of produce from the farm to the place of consumption it will do more to "increase efficiency of the farmer" and "add to the size of the crops" than has yet been done. The farmers will see that production is increased when they are shown ways of making larger crops yield larger net profits.

Primary Election On May 19 the voters of this state will have their first opportunity to participate in the general primary. Theoretically, they will have the opportunity to express their choice on members of their party for candidates for the various state and federal offices. Practically, they will vote on candidates selected for them by the party leaders. It would be difficult to conceive of a more complete prostitution of the intents and purposes of the primary law than is presented in this state this spring. The politicians have made their own choice with just sufficient competition to make an election necessary, and the voters are merely asked to legalize such selections by going thru the form of voting. All parties are equally guilty and every pretense at reform has been proven false in their first move of the campaign. There is little real inducement to the voter to become a party to this fraud by attending the primaries for this election alone. But the people of the state cannot afford to admit defeat in their hope of seeing a real primary. Nothing would suit the politicians better than to have the bulk of the people stay away from this primary so that it might be declared a failure and pave the way for a return to the old convention system. The present law is all right in itself. It needs to be safeguarded from those who have so completely defeated its purpose in the present election. The only alternative is for the voters to repudiate the party leaders who are responsible for the present farce so far as possible and make a united effort for enforcement of the purpose of the law in future elections.

NEW JERSEY FARM NEWS

New Jersey Heads Prosperous States.—The statement is made on the authority of the United State Census Bureau, that New Jersey is undoubtedly the most prosperous State in the Union. "At the present time about 2.8 percent of the total population of the United States will be found in the state of New Jersey, and only 0.2 percent of the total debt is attributed to that state." The agricultural districts come in for their share of glory. Next year, the appropriations for the agricultural college and experiment station, farm demonstrator work and all other agencies contributing to agricultural success in the state should be doubled.

State College News.—Professor Alva Agee, State superintendent of farm demonstration and of the experiment station extension work lectured to the students on "The Desirable Farm." The students of the junior class planted three orchards on a large estate at Dayton, as a part of their practical work.

School Heads Meet.—The annual spring meeting of the State Board of Education with the county superintendents of the State was held at Lakewood. School legislation was under discussion. The feature of the meeting, however, was an address by Miss Jessie Field, field secretary for the promotion of rural education of the New York Y. W. C. A. The theme of Miss Field's talk centered about the correlation of school work in the rural districts to home life. She showed how in the rural schools, reading could be made of practical benefit. Model farming, poultry raising, and various other lines of work were discussed with the idea of showing how pupils and parents could be drawn closer together, how communities could be benefited and better home conditions attained thru the judicial incorporation of such subjects in the school's curriculum. Summer camps for both boys and girls, county and State contests in corn and other farm products, cooking, sewing and the like, were shown to be great agencies in the development of the pupil and the elevation of the parents.

Estimating The Peach Crop.—In Central New Jersey, the prospects appear to be favorable for another bumper crop, altho danger of frost is not yet past. Some growers have piles of brush ready to light in their orchards, in case of frost. It is reported that in several localities peach buds have been killed. This condition is found particularly true with the Crawford and Elberta varieties. In North Jersey, so far as can be learned, buds have suffered no damage whatever. New Jersey farmers have not yet learned to properly care for their orchards during all changes of weather.

Tomato Experiments.—A Jersey market gardener, set out 600 tomato plants on Saturday, April 18. Each plant is surrounded on three sides and on top with a wooden material and a glass covers the fourth opening, which faces the sun. This glass is raised or lowered as the weather conditions require, and, it is expected by these means to market the tomatoes somewhat earlier than those who grow them in the customary way. The experiment is being watched with interest by truckers for miles around, and if it does prove a success, many others will adopt it for another year.

Orchard Practice.—The recently organized Monmouth county farm bureau has already made a good start. One of the first things to which the expert gave his attention was the proper spraying of fruit trees. A series of spraying demonstrations will be carried on in the large fruit orchards of John Willey, located in the midst of a great fruit growing region. Demonstrations of advanced methods of spraying will also be carried on in other parts of the county. The following spraying schedule will be employed: For apples and pears; (1) Just before the blossom buds open, apply 5 quarts concentrated lime-sulphur solution and three pounds arsenate of lead paste to each 50 gallons of water. If the aphis (plant louse) has caused injury the use at this time of one pint of "Black Leaf 40" to every 100 gallons of the above solution will control them. (2) Just after petals fall from the bloom repeat the above mixture of arsenate of lead and lime-sulphur. (3) Repeat ten days later. (4) Repeat this application the last week in June upon fall and winter varieties. For peaches the following applications are recommended to control the plum curculio and fungus troubles: (1) Just after the petals fall apply 3 pounds arsenate of lead paste to 50 gallons of water. This controls the first curculios that come out. (2) Just as the little husk or calyx is falling off the small fruit spray with self-boiled lime-sulphur (8 pounds of stone lime, 8 pounds of sulphur to 50 gallons of water) combined with 3 pounds of arsenate of lead.

Farmer Fire Fighters.—The farmers of Atlantic township, Monmouth County, have organized a fire company. They will purchase a chemical engine at a cost of about $3,000. Of this amount, $1,000 has already been raised by subscription, while the balance, $2,000 will be raised by taxation. A fire house will also be erected at a convenient local center. At present, the township has no fire protection whatever, and the great number of barn fires has led to this action, which other agricultural communities would do well to follow. —D. T. Hendrickson.

NEW YORK LETTER

To Make Brick.—Brick for use on the roads of the state will be manufactured at the Elmira state reformatory as soon as buildings and apparatus can be erected. The governor has signed the bill appropriating $25,000 for this purpose.

Onondaga Farm Bureau.—The Onondaga farm bureau is rendering the farmers of that county a good service in supplying them with farm laborers. About 250 have applied to the bureau for work and about 40 have been placed. Three committees were appointed at the last meeting, one on marketing, one on transportation and one on legislation. The committee on marketing is to take up the question of marketing farm products in Syracuse and probably the question of public markets.

State Fair Funds.—Owing to the failure of the last legislature to appropriate the necessary funds for state fair uses the commission finds itself without much money in the treasury. About $72,000 are needed for premiums, printing and maintenance of grounds. The premium list calls for $55,000 in premiums which is the largest amount ever offered by the society, it is said. The commission has appropriated $10,000 for attractions and music.

Highway Bill Signed.—The governor has signed the bill appropriating $10,000,000 of the second referendum fund for the construction of new highways. The approval of this bill will permit the prompt advertisement of all those roads for which plans and specifications have been prepared and it will permit the engineers to design this summer the most important roads for the completion of a great trunk line in time for advertising in the fall. The end of another year ought to see the completion of all the main trunk lines.

New Law On Fruit Trees.—The governor has signed the bill which provides that every seller of fruit bearing trees grown in the state, must attach the certificate of the department of agriculture showing that the trees have been inspected by the department. Each shipment must also carry a label designating the name or variety of the trees in the shipment and if any are found not true to name the purchaser may sue for damages at any time prior to the third bearing year. It places upon the seller the burden of proving that any provision not in writing, exempting the seller from liability, was fully understood by the purchaser.

Municipal Forestry. — Fayetteville, Onondaga County, will plant the first municipal forest known. About 10,000 trees will be planted on a tract of land about the new storage reservoir of the municipal waterworks located about one mile from the village. Prof. Stephen and a party of students from the school of forestry will supervise the work of planting out the trees which will be mostly Norway spruce and white pine.

Cayuga Farm Bureau.—A county farm bureau was organized recently at Auburn with W. B. Avery of Aurora as president and Ernest Tabor, of Meridian, secretary. About 100 farmers were present to form the nucleus of the association. M. C. Burritt, state superintendent of farm bureaus, was present and addressed the meeting.

Road Graft Cases.—The grand jury of Albany county which has had under consideration the charges made against the Dix highway commission for neglect of duty, has found no indictment against the members, who were John A. Bensel, Duncan W. Peck, C. Gordon Reel and his deputy, C. F. Foley. It was alleged that they had let $3,000,000 worth of contracts in about an hour's time.

Highway Grafters.—The jury in the case against a contracting company on Long Island for conspiracy in connection with building a state road, returned a verdict against the contractors and the company was fined $500. Each of the parties found guilty was sentenced to serve eight months' imprisonment. Certificates of reasonable doubt were granted and each defendant gave $5,000 bail pending motions for a new trial.

CROP REPORT.—MAY 1.

The crop reporting board of the United States Department of Agriculture reports on conditions of crops May 1 as follows: Area of winter wheat to be harvested, 35,387,000 acres, or 3.1 percent less than sown but 11.6 percent more than harvested last year. Average conditions on May 1, 95.9 compared with 91.9 last year and 85.5 the 10-year average for May 1. Averge candition of rye was given as 93.4 percent compared with 91 percent last year and 89.1 the 10-year average. Meadows, 90.9 against 88.5 last year and 88.1 for 10 years. Spring planting was 56.4 percent completed on May 1, compared with 57 percent last year and 54.6 percent in the last ten-year period. Details for eastern states follow:

	Penna.	N. J.	Md.	Del.	U. S.
Winter Wheat.					
Condition May 1. ...	94	93	94	94	95.9
Area to harvest ...	1,310,000	79,000	612,000	114,000	35,400,000
Rye					
Condition May 1. .	94	93	92	90	93.4
Condition 10-year .	90	92	91	91	89.4
Meadows					
Condition May 1	89	90	87	86	90.9
Condition 10-year .	88	90	86	88	88.1
Spring Plowing					
Percent May 1. ...	51	52	59	61	70.9
Percent 10-year .	71	64	76	71	66.6
Spring Planting					
Percent May 1. .	25	39	27	30	56.4
Percent 10-year	40	45	34	36	54.6
Hay					
Tons on Farms	663,000	80,000	59,000	13,000	7,830,000

MARYLAND NOTES

Farm Labor Wanted.—The state Bureau of Immigration has recently sent more than 1,000 men and women to work on Maryland farms. There are yet many more places needing such help, but no applicants.

Cannery Prices.—There is much dissatisfaction at the price offered by the Hughesville Cannery to tomato growers viz: 18 cents a bushel basket, which is $7.47 a ton. Farmers feel that if war prevails canned goods will be in greater demand, and higher prices will be realized. Some of the Hughesville farmers are appealing to those of the state not to raise any tomatoes unless they can realize at least $9 a ton. It is anticipated that early tomatoes will be a short crop owing to the prolonged cold weather.

Fish Hatcheries Bill.—Congress has before it a bill appropriating $790,000 for the establishment of fish hatcheries in many states. Maryland fishery experiment plants will be devoted to the study of diseases and problems in connection with fish propagation. In many other states, fish hatcheries and cultural plants costing $50,000 each are also to be established.

Poultrymen Active.—Kent and Queen Anne County farmers contemplate having a poultry show in July. There are several extensive poultry farms in these counties, among which is the largest waterfowl farm in Maryland.

Strawberry Crop Good.—Strawoerry prospects on the Eastern Shore are fine, but the season will be a little later than usual owing to the cool weather of the past 10 days. In the vicinity of Ridgely, the greatest strawberry shipping point in the state, the acreage of strawberries has been considerably increased. Armour & Co. have a big preserve factory there that employs many hundred people and a great many growers sell all their strawberries at the factory. Cantaloupe acreage this season will be greater than ever, notwithstanding last season there was a louse or insect that was exceedingly destructive to the vines.

Association Buys Fair Grounds.—Dorchester County Fair Association has bought a farm located on the outskirts of Cambridge and a complete fair ground will be in evidence there in time for the fair to be held next August. —G. O. B.

ANNUAL NORMAL INSTITUTE

The spring meeting of the Farmers' Annual Normal Institute and State Board of Agriculture will be held at Stroudsburg, Pa., May 26 to 28. A program of unusual interest has been prepared, including principally the regular speakers of the Pennsylvania institute staff. Subjects are timely and of practical interest to all farmers.

HOLSTEIN-FRIESIAN ANNUAL MEETING

The 29th annual meeting of the Holstein-Friesian Association of America will be held at the Sherman House, Chicago, Ill., June 2 and 3. For full particulars address Secretary F. L. Houghton, Brattleboro, Vt.

The Farm Shop. — Every farmer knows the value of the farm shop in saving of time and expense. Many have neglected fitting out such a shop without investigating cost. A new catalog issued by Powell, Clonds & Co., 602 Arch St., Philadelphia, Pa., lists and describes blowers, forges, drills, tire benders, tire shrinkers, screw plates, taps and dies at prices that are within reach of all and at which these implements will soon pay for themselves in time and money saved. The catalog is free to our readers upon request to the above address.

COUNTY NOTES

Fayette Co., Pa., (S.W.) April 20.—Has been warm for about two weeks, with plenty of rain. Grass is growing nicely. Fruit trees almost out in leaf. Wheat is looking fine. Not much live stock changing hands at present. March pigs selling from $8 to $10 pair. Farm work generally is very late. No oats sowed yet. Some plowing done. Very few potatoes planted.—Samuel A. Harris.

Frederick Co., Md., (N.C.) April 21.—Very wet and cool; a very cool April. Live stock lower in price; feed being very scarce and high. Wheat looking fairly good. Grass good except a few fields, but very late. Garden truck not growing much, not over half of early vegetables planted and only a few potatoes. Oats have been sown. Very little spring plowing done yet. Much manure to be hauled.—H. C. Fawley.

Clinton Co., N. Y., (N.E.) April 20.—Weather fine and warm; 80 degrees in shade. Snow gone. Cows high and in good demand at $50 to $80 each. Veals, 7 cents lb., live; none sold dressed. Horses in good demand if heavy. Light horses a drug on the market at any price. No farm work done as yet. Sugar making about done. Syrup, $1 gal.; sugar, 12@14c. It has been a very good season.—Henry E. Gilbert.

Morris Co., N. J., (N.) April 29.—Very warm; frequent showers. Winter wheat and rye are looking fine. Meadows good. Live stock has wintered well. Hay, $20 ton; corn, $20 ton; wheat $1.00 bu; eggs, 22c; butter, 32c; farm horses, $175 to $200. Spring plowing has been very slow on account of wet weather. Very little oats planted.—Geo. F. Williamson.

Lancaster Co., Pa., (S.E.) May 8.—Cloudy and showery. Weather has been cool and pleasant with plenty of rain to keep the ground moist. Live stock is in healthy condition. Wheat and grass are growing rapidly and promise good crops. Wheat, 92c; corn, 74c; oats, 45c; hay, $16; straw, $8; butter, 35c; eggs, 18c. Potatoes and oats are nearly all planted. Many farmers are planting potatoes instead of tobacco. Tobacco is being bought slowly at 4 and 5 cents per pound. Farmers are very busy. Still much sod to plow, owing to a late season and frequent wet days. Very little corn planted yet. —J. Henry Haverstick.

Chester Co., Pa., (S.E.) May 4.—Cool and wet. Cows and horses have been bringing good prices. Hay, $15.50 to $16; eggs, 16c; straw, $10; potatoes 90c bu. Farmers are finishing potato planting and are busy preparing ground for corn. Oats has been sown.—Hayes C. Taylor.

York Co., Pa., (S.E.) May 7.—Warm weather with an occasional nice shower. All live stock looking well. Prices of beef cattle a little brisker. Fresh cows bringing $60 to $80; fat hogs 11½c live; potatoes 90c bu; wheat, 94c bu; corn, 74c bu; butter, 32 to 36c lb; eggs, 16c doz. Farm work is a little late. Most farmers are busy getting their corn ground ready for planting while others are planting.—Clarence D. Emig.

ATLANTIC
AUTOMOBILE
GASOLINE

Gasoline C. P.

The chemist asks for no guarantee upon his supplies other than the letters C. P., meaning "chemically pure." For gasoline, the symbol C. P. is not used, but the name *"Atlantic"* on Gasoline affords the motorist, and the farmer who owns a gas engine, just the same grounds for confidence that "C. P." does the chemist.

Forty-eighty years of experience and manufacturing resources have combined to set a distinctive quality standard for ATLANTIC AUTOMOBILE GASOLINE.

Our distribution service is the best in the State. Our tank wagons will deliver regular supplies of first quality engine fuel right to your door. Ask for it by name at any first class garage—"Atlantic Automobile Gasoline."

The Atlantic Refining Co.
Everywhere in Pennsylvania

How Flies Cause Disease.

The common house fly is a prolific carrier of typhoid fever. During the Spanish-American war only 250 men were killed by bullets to 5,000 killed by typhoid fever, cholera morbus and dysentery, and it is now positively established that the germs of these diseases were spread by the flies that came directly from the excrement pits and walked all over the food in the mess tents. Now we practically eliminate these diseases in our army camps by covering the excrement pits with lime and screens. Flies carry these diseases in their alimentary canals as well as on their feet, for biologists find typhoid and cholera germs in fly specks. As many as 100,000 disease bacteria have been found on one fly's body. Just look at the hairs on the fly's leg pictured in Fig. 4, and you will see what a large bacteria-carrying area it has. And then look at the bacteria cultures on the gelatin plate in Fig. 5, over which one fly walked.

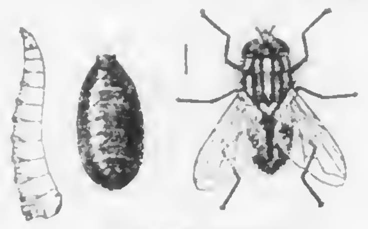


FIG. 1. COMMON HOUSE FLY.
(Larva at Left, Pupa Next.)

The House Fly

There are two kinds of house flies, the large (Fig. 1) (Musca domestica), and the small (Fig. 2) (Homalomyia brevis), but it is the large kind that is the most pestilential because it is the most prolific. The little ones are not only smaller but lighter in color, and their abdomens are more slender and pointed.

The common house fly (Fig. 1) breeds chiefly in horse manure, hence well-screened manure pits or closets for your horse barns will prevent flies from depositing eggs. Manure scattered in the fields is negligible as a source of flies because the requirement for hatching is moist manure. One fly will lay about 120 eggs at a "sitting", which will hatch into maggots in 6 to 24 hours—in warm weather in about 8 hours. The maggots or larvae continue thus about five days, then turn into pupae with hard dark brown skin or shells, which in another five days turn out full-grown flies. L. O. Howard chief entomologist of the United States Department of Agriculture, tells of counting, on one August day, 160 house fly larvae and 146 pupae in one-fourth of a pound of horse manure. This would make about 1,200 flies to the pound!

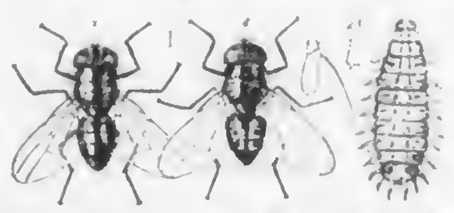


FIG. 2. SMALL HOUSE (MALE, FEMALE AND LARVA.)

One fly averages three to four crops of 120 eggs during her life period, averaging about 17 days. It is safe to estimate that half of them will be females, hence a little calculation shows us just why there are so many flies in the latter part of the summer. If one mother fly turns out 240 other mother flies, and 12 to 14 generations develop during the summer there are bound to be quintillions of them in your locality before cold weather shuts off the breeding. If one fly occupies a cubic quarter of an inch, one cubic foot would hold 200,000 flies, and by October 1 the progeny of one fly might occupy about 900,000 cubic miles if they all developed and lived.

But it is the number of disease-producing bacteria that flies bring and deposit on and in our food that concerns us most. From the cleanest one of 114 flies caught by two Connecticut biologists in sterilized nets and kept in sterilized bottles of water, there developed 550 bacteria, and the foulest one carried 6,600,000 disease germs. So you see what a fly can do to your babies thru the milk that you feed them unless you protect that milk from flies. Better not take any chances. Kill the flies now, and keep them out of their favorite breeding places as we have suggested at the beginning of this article.

The Stable Fly

The house fly never bites you; its mouth is built only for sucking. It is the stable fly (Stomoxys calcitrans, Fig. 3) that bites or stings; its proboscis is sharp so that it readily punctures the skin and then sucks your blood. It is the sting of such puncturing that so maddens stock. In the Southwest some years the stable flies are a terrible pest to stock. While these flies frequent the barns and stock they are quite apt to want to get in the house just before a rain, and they are most noticeable in the late summer. When flies bite you, remember that they must be stable flies not house flies. They are about the same size as house flies, and differ from them only in being slightly broader, with rounder abdomens, and in having slightly different thorax markings (see Figs. 1 and 3).

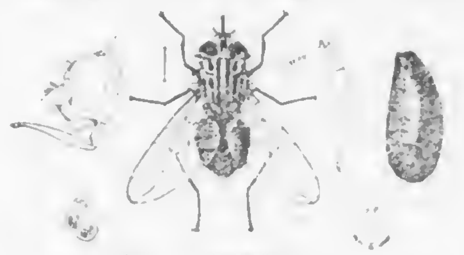


FIG. 3. STABLE FLY.
(Head with Proboscis at Left. Larva and Pupa at Right.)

Stable flies breed chiefly in moist straw stacks or in strawy manure, and they are said to prefer oat straw to wheat straw. The female lays up to 278 eggs during her average life period of 17 to 29 days, and it takes about 19 good warm days to develop a stable fly from the egg, so about five generations may develop during one summer. Because the flies cannot crawl into tight bales to lay their eggs, baling your straw will prevent their breeding to a large extent.

It has been definitely determined that the stable fly carries the germs of infantile paralysis, that dread infection that kills or paralyzes so many babies. It has also been found carrying the germs of such stock diseases as anthrax and round-worm in cattle and infectious anemia and glanders in horses. Beware of the house and stable flies as you would of poisonous serpents.—Harriet Mason.

More Testimony Against

Study of the fly and its habits substantiate that such statements as the following are all too true: "Flies kill a greater number of human beings than all the beasts of prey, with all of the poisonous serpents added. They spread diseases which slay thousands, while big, powerful beasts kill single victims." It is rather difficult for us to realize that anything which we have known so long and so intimately as the common housefly can be so dangerous, altho scientists have been warning us about them for several years. Because they could not point to specific cases and say that this man, or this child or woman is suffering from disease carried to them by flies, we have not been sufficiently impressed. But after it was proved conclusively that the mosquito does carry yellow fever, and that no mosquitoes result in no yellow fever we begin to think that maybe the house fly might be equally productive of disease.

Try to keep a fly going in a room for a few minutes. It may fly 20 feet to the one you walk but you can't wear it out. It is a wonderful flier, and it has a marvelous sense of smell, too. The odor that it seems to like the best is the one that arises from filth or decay and refuse matter. Odors of this kind will attract it from some distance.

Every one has seen flies swarming around manure heaps, garbage cans or dropping around the troughs where the pigs are fed. How many can remember seeing flies hovering around flower beds or the fragrant blossoms of fruit trees, or even the sweet aroma of perfectly ripe fruit. The fly, to be sure, does like sweet things but they are sweet tasting things and not sweet smelling. It will come and light on the very lump of sugar that you are about to put into your cup of coffee; after poising there it may dart to the lips of a sleeping child. And it may have come into your house straight from the manure pile or worse yet from the body of a typhoid patient or from the room of some one suffering from some other infectious disease.

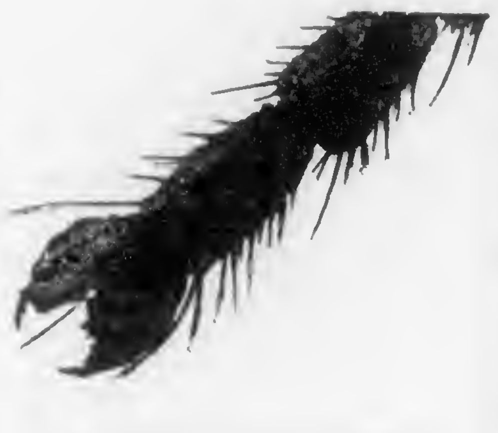


FIG. 4. ENLARGED PHOTO OF HOUSE FLY'S LEG AND FOOT.

When we think of the thousands of places where a fly may light and what it may carry on its feet to wipe off on our food, we ought to be alarmed to the point that we will try to keep flies out of our houses and away from our food. Milk should be particularly well protected, for it is one of the best mediums for developing disease germs. A fly for instance may fall into a pan of milk and leave a few germs there, and in a very short time there will be millions of bacilli which have come from the few left there by the fly. A strong well person might drink the milk and never feel any discomfort from the germs, but if the milk is taken into the system of an over worked, tired person or of a baby, in either case the power of resistance is low and the result will be disease.

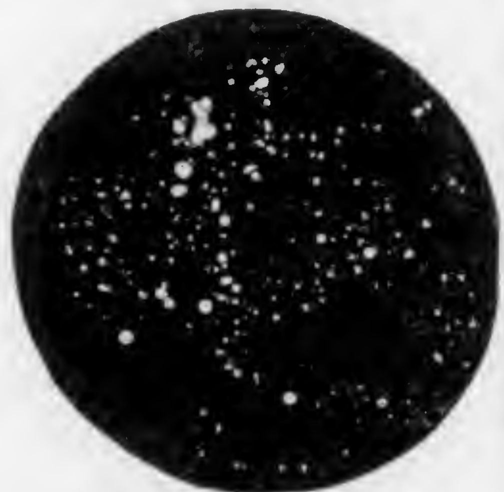


FIG. 4. BACTERIA CULTURES ON GELATIN PLATE OVER WHICH A FLY HAS WALKED. EACH DOT CONTAINS THOUSANDS OF BACTERIA.
(Photo by Stocking, Cornell Agnl. College.)

If wire screening is not available all over the house the ordinary mosquito netting costs so little that it comes within the reach of every family. And where there is a boy in the family who is skillful with tools he can make frames and buy the wire net for a little money. The 26-inch wide wire netting costs 13 cents a yard in some stores.

After screening the house see that your premises are kept clean as possible. If the refuse from the table is fed to pigs or chickens see that your garbage cans and pails are kept away from the house and that they are kept clean. Scald them out every little while, scrubbing them with a broom, then scald the broom.

If flies do get into the house in spite of the screens, kill them by using sticky fly paper, traps and wire fly "swatters." I always hesitate to use any kind of fly poison for fear children may get it.

The National Civic Association Bulletin says:

"A cheap and perfectly reliable fly poison, which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram (which can be bought at any drug store) in two ounces of water, and add a little sugar; put this in shallow dishes and distribute them about the house. To quickly clear the room where there are many flies, burn pyrethrum powder in the room. This stupifies the flies, when they may be swept up and burned."

In the early part of the summer is the time to wage war on the flies, for then they are killed before they have time to breed more, and in this way every year will see fewer flies to fight.—Mrs. Nevada D. Hitchcock.

Mrs. Youngwise—"I'm afraid John's mother's offended. She came over to help with my washing, and it was nearly done. She said I hadn't done it right because I didn't boil my clothes like she and her mother always had, and I said she didn't spin and weave any more like people used to, and then she left in a huff."

Anty Drudge—"She'll get over it when I talk to her and tell her about Fels-Naptha Soap. I'll tell her to blame me because I advised you to use it."

Every year there is some new way to lighten women's work—but never a better nor more sensible one than the Fels-Naptha way.

Fels-Naptha Soap in cool or lukewarm water will do anything that soap and water can do, in half the time it used to take with less than half the bother.

It will get your washing on the line so much earlier, and the clothes will be sweeter, cleaner and whiter than ever before. You don't have to boil them, either.

Better buy it by the box or carton. For all kinds of work every day in the year follow the directions on the Red and Green Wrapper.

Fels & Co., Philadelphia.

GOOD SOUR MILK RECIPES

Why is it that so many house keepers throw away their sour milk, which makes the most delicious cakes, doughnuts, and biscuits, and use in its stead baking powder at 50 cents a pound? Don't you think this may be one of the things that contributes to the high cost of living? A 50-cent can of baking powder will make no more or better food than the sour milk that some throw away combined with an 8-cent box of soda. Is it that housewives do not know how to use it? I almost never see a recipe calling for sour milk and soda in any of our cookbooks or magazines.

We think this is because these publications are edited by city-bred people for readers who are largely city-bred people, who seldom have enough extra milk to get sour, consequently they have never learned how to use it. We have frequently encountered city-bred housekeepers who stop helpless when perchance they find that their daily portion of milk has soured. The country-bred girl learns from childhood up how to make good use of sour milk and cream and buttermilk—in fact she misses them when none are at hand on occasions. The writer confesses to some annoyance a few days ago on starting to make cookies by her favorite recipe and finding no sour cream or buttermilk for use in them.—The Editor.)

Here are a few of the many sour milk recipes which have been used in my family and in mother's and grandmother's before me for many years.

Doughnuts.—One egg, 1 cup sugar, 1 cup sour milk, ½ teaspoonful salt, ½ teaspoonful each of ginger, nutmeg, cinnamon and soda. Dissolve the soda in 1 tablespoonful hot water. Mix in sufficient flour to handle and fry in deep hot fat. (Dissolving the soda in the hot water starts the liberation of the carbon dioxide gas, which is the leading agent of soda and baking powder, therefore it is really better not to put soda into sour milk or to dissolve it in water before it is incorporated into the batter. Instead sift it into the flour the same as you do baking powder, and beat the flour well into the liquid then put into the oven before the gas escapes, and your cake will be lighter. If you do not believe that you are losing much of the soda's leavening power by dissolving it in the hot water before putting it into the cake, try putting some soda into glasses of hot water and cold water, and see how much more quickly the gas escapes from the hot water. This will show the reason for sifting the soda into the flour. Therefore we have changed the following recipes accordingly. One level teaspoonful soda to 1 pint of sour milk is the right proportion to neutralize the sour milk acid, or ½ level teaspoonful to 1 cup, as these recipes indicate.—The Editor.)

Biscuits.—Two cups sour milk, shortening the size of an egg, ½ teaspoonful salt, 1 teaspoonful soda. Stir enough flour with the soda sifted in it into the sour milk to make it about as thick as pancake batter, add the salt, the melted shortening, and mix as soft as you can handle without having the dough floury on top.

One Egg Cake.—One cup sugar, 1 cup sour milk, 2 cups flour, 1 egg, 3 tablespoons melted butter, ½ teaspoonful soda, ½ teaspoonful salt. Place the sugar and melted butter together and stir well, then add the beaten egg and the milk, next add the flour and soda and beat vigorously. Flavor to taste.

A Fine Foundation Cake.—Two eggs, 1 cup sugar, 1-3 cup butter or 3 tablespoonfuls sour cream, ½ cup sour milk, 1¾ cups flour, 1-3 teaspoonful soda, and ½ teaspoonful salt. Cream the salt, sugar and butter, add the well beaten eggs and milk and stir in the flour and soda gradually and add flavoring. Bake in layers.

Wheat Pancakes.—Two cups sour milk, 2 cups sifted flour, 1 teaspoonful salt, 1 teaspoonful soda. Beat two minutes and fry on a hot griddle. This quantity will be enough for three or four persons.

Ginger Cookies.—One and one-half cups shortening, 1 cup molasses, 1 cup sour milk, 1½ cups sugar, 1 teaspoonful salt, 1 teaspoonful ginger, 1 heaping teaspoonful soda sifted into enough flour to mix as soft as you can handle. Roll thin.

Cookies.—Two cups sugar, 1 cup butter or shortening, 1 cup sour milk, ½ teaspoonful salt, ½ teaspoonful grated nutmeg, ½ teaspoonful soda sifted into flour sufficient to handle. Bake in a quick oven.

Corn Gems.—One-half cup sugar, 1 scant cup corn meal, 1 scant cup sifted flour, 1 cup sour milk, 1 teaspoonful salt, ½ teaspoonful soda. Stir all together thoroly. This will fill one set of gem irons holding one dozen. Heat the irons before filling.—Mrs. Jennie S. Lamson, Franklin Co., N. Y.

PENNSYLVANIA FARMER PATTERNS

Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 214 18 So. 12th St., Philadelphia, Pa.

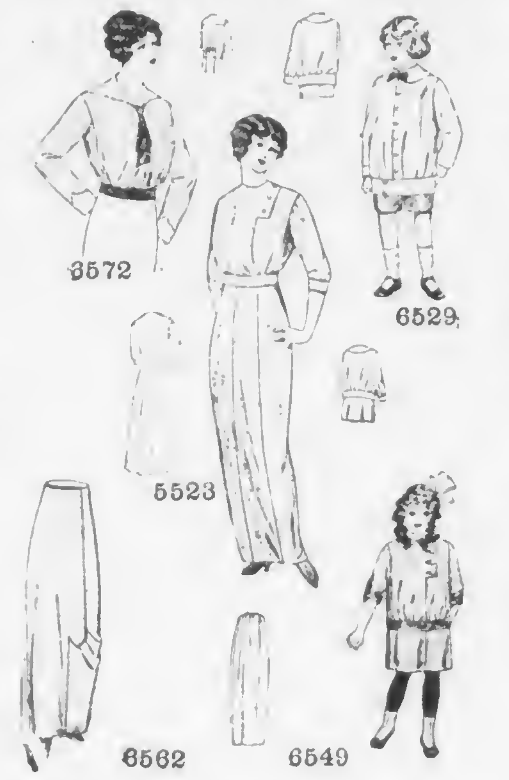
6572.—Ladies' Shirt Waist.—Cut in sizes 34 to 44 inches, bust measure. Size 36 requires 1¾ yards of 44-inch material and ⅜ yard of 27-inch contrasting material. Price of pattern, 10 cents.

6529.—Boys' Balkan or Russian Suit.—Cut in sizes 2, 4 and 6 years. Age 4 years requires 2¼ yards of 36-inch material. Price, 10 cents.

5523.—Ladies' House Dress.—Cut in sizes 32 to 44 inches, bust measure. Size 36 requires 7 yards of 27-inch material. Price, 10 cents.

6562.—Ladies' Three-Gored Skirt.—Cut in sizes 22 to 32 inches, waist measure. Size 22 requires 2¾ yards of 36-inch material. Price, 10 cents.

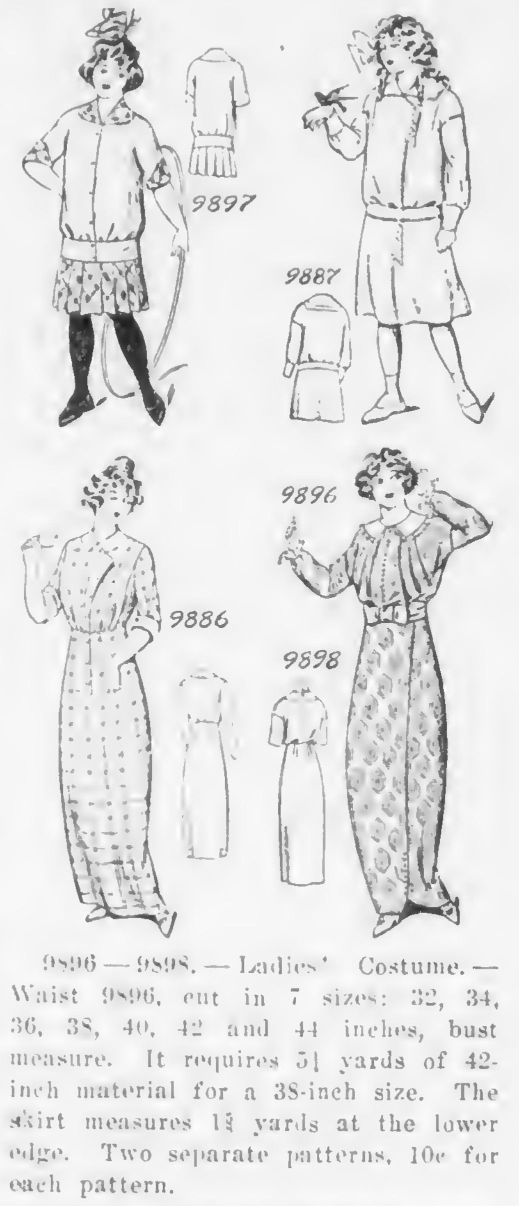
6549.—Girls' Dress.—Cut in sizes 2 to 8 years. Age 4 years requires for dress and bloomers 3 yards of 36-inch material with ¼ yard of 27-inch contrasting goods and ⅜ yard of 36-inch material for underwaist. Price, 10 cents.



9897.—Girls' Dress with Lining.—Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 3½ yards of 40-inch material for an 8-year size. Price of pattern, 10 cents.

9887.—Girls' Dress with Lining.—Cut in 5 sizes: 8, 10, 12, 14 and 16 years. It requires 3¾ yards of 40-inch material for a 12-year size. Price, 10 cents.

9886.—Ladies' House Dress.—Cut in 7 sizes: 32, 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 5¼ yards of 40-inch material for a 34-inch size. The skirt measures 1¾ yard at the foot, in a medium size. Price, 10 cents.



9896—9898.—Ladies' Costume.—Waist 9896, cut in 7 sizes: 32, 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 5¼ yards of 42-inch material for a 38-inch size. The skirt measures 1¾ yards at the lower edge. Two separate patterns, 10c for each pattern.

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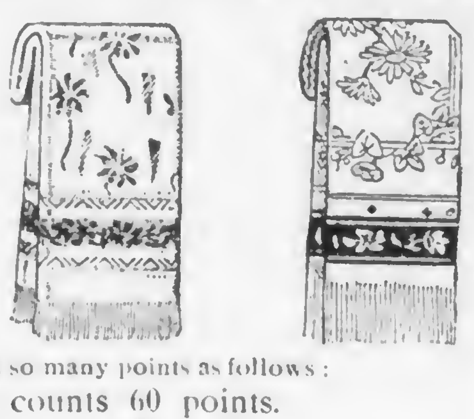

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PENNSYLVANIA FARMER, 214 So. 12th St., Philadelphia, Pa

MR. PRATT

By JOSEPH C. LINCOLN

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SYNOPSIS OF PREVIOUS CHAPTERS

Two New York business men, Van Brunt and Hartley, come to Wellmouth for a vacation. Solomon Pratt, Skipper and village character, finds the "twins," as they are dubbed, interesting but takes them for lunatics and their "man" for their "keeper." The "twins" after harrowing experiences with cooks, ask Pratt to find them a secluded place of rest and act as their cook. The skipper and Hartley have just landed from the "Dora Bassett" on their road to a fair at Eastwich Port.

CHAPTER IV (Concluded)

"Chase nothing but lambs there," drawls Van Brunt, lazy, and with his eyes half shut. Then he turned over and looked at his chum.

"Great Caesar! Martin," he says, "you don't mean to tell me that you're going up into that crowd of hayseeds to hang over a fence and watch some one run, do you? Why any one on God's earth should want to run," he says, "when they can keep still, is beyond me; and why you, of all men, should want to watch 'em do it—that's worse yet. Come here and be natural and decent."

But Hartley wouldn't do it. His blue streak seemed to have struck in again and he was kicking the sand, nervous-like, with his foot.

"Come on, Van," he says. "I want the walk."

"Not much," says Van. "Walking's almost as bad as running. I'll be here when you get back." And he stretched out on the pine needles again.

It may be that Hartley did want that walk, same as he said, but he didn't seem to get much fun out of it. Went pounding along, his cigar tipped up to the visor of his cap, and his eyes staring at the ground all the time. And he never spoke two words till we got to the fair grounds.

There was a dickens of a crowd, five or six hundred folks, I should think, and more coming all the time. Everybody that could come had borrowed the horses and carryalls of them that couldn't and had brought their wives and mothers-in-law and their children's children unto the third and fourth generation. There was considerable many summer folks—not so many as there is at the cattle show in August—but a good many, just the same. I counted five automobiles, and I see the Barry folks from Trumet riding down in their four-horse coach and putting on airs enough to make 'em lop-sided.

Hartley gave one look around at the gang and his nose turned up to twelve o'clock.

"Gad!" says he, "this, or something like it, is what I've been trying to get away from. Come on, Sol. Let's go back to the boat."

But I hadn't seen so many shows as he had and I wanted to stay.

"You wait a spell, Mr. Hartley," says I. "Let's cruise round a little first."

So we went shoving along thru the crowd, getting our toes tramped on and dodging peddlers and such like every other minute. There was the "test your strength" machine and the merry-go-round and the "ossified man" in a tent: "Walk right up, gents, and cast your eyes on the greatest marvel of the age all alive and solid stone only two nickels a dime ten cents." and all the rest of it. Pretty soon we come to where the feller was selling E Pluribus Unum candy—red, white and blue, and a slab as big as a brick for a dime.

Hartley stopped and stares at it.

"For heaven's sake!" says he. "What do they do with that?"

"Do with it?" says I. "Eat it, of course."

"No?" he says. "Not really?"

"Humph!" I says. "You just wait a shake."

There was a little red-headed youngster scooting in and out among the folks' knees and I caught him by the shoulder. "Hi, Andrew Jackson!" says I. "Want some candy?"

He looked up at me as pert and sassy as a blackbird on a scarecrow's shoulder.

"Bet your natural!" says he. I jumped.

"Lord!" says I; "I cal'late he knows you."

Hartley smiled. "How do they sell that—that Portland cement?" says he. Give me some," he says, handing a half dollar to the feller behind the oilcloth counter. The man chiseled off enough for a fair-sized tombstone and handed it out. Hartley passed it to the boy. He bit off a hunk that made him look like he had the mumps all on one side, and commenced to crunch it.

"There!" says I. "That's proof enough, ain't it?"

But he wa'n't satisfied. "Wait a minute," says he. "I want to see what it does to him."

Well, it didn't do nothing, apparently, except to make the little shaver's jaw sound like a rock crusher, so we went on. By and by we come to the fence alongside of the place where they had the races. The sack race was on, half a dozen fellers hopping around tied up in meal bags, and we see that. Then Hartley was for going home again, but I managed to hold him. The greased pig was the next number on the dance order, and I wanted to see it.

Major Philander Phinney, he's chairman of the Eastwich selectmen and pretty nigh half as big as he thinks he is; he stood on the judges' stand and bellered that the greased pig contest was open to boys under fifteen, and that the one that caught the pig and hung on to it would get five dollars. In less than three shakes of a herring's hind leg there was boys enough on that field to start a reform school. They ranged all the way from little chaps who ought to have been home cutting their milk teeth to "boys" that had yellow fuzz on their chins and a plug of chewing tobacco in their pants' pocket. They fetched in the pig shut up in a box with laths over the top. He was little and black and all shining with grease. Then they stretched a rope across one end of the race field and lined up the pig chasers behind it.

"Hello!" says Hartley, "there's our Portland cement youngster. He'll never run with that marble quarry inside of him."

Sure enough, there was the boy that had tackled the candy. I could see his red head blazing like a lightning bug alongside of a six-foot infant with overalls and a promising crop of side whiskers. Next thing I knew the starter—Issachar Tiddit, 'twas—he opens the lid to the pig box and hollers "Go!"

The line dropped. That little lone pig see twenty odd pair of hands shooting twards him, and he fetched a yell like a tugboat whistle and put down the field, with the whole crew behind him. The crowd got on tiptoe and stretched their necks to see. Everybody hollered and hurrahed and "haw, hawed."

Now I've been calling the place where they had the races and so on a field. Well, twa'n't really a field, but just part of the course where they had trotting matches on cattle show days. There was a fence on each side of it and across the ends of the section they was using there was ropes stretched. Back of the fences was the crowd on foot, and back of the ropes was more of 'em, but behind these ropes likewise was lots of horses and wagons and carry-alls and such. Every wagon was piled full of people and amongst 'em I could see the Barry coach, with the four gray steppers prancing up and down in front of it and old Commodore Barry and his son on the front seat with the women folks behind.

Well, when that pig started he made a straight course for the lower end of the field, but the sight of the horses and all scared him, I guess, and he jibed and back he come again. Half a dozen of the pig chasers—them that was nearest to him when he come about —ran into each other and piled up in a heap, squirming like an eel-pot. They got up in a jiffy and started over again, meeting the gang that was coming back on the second lap.

By the time that pig had made three laps round that course he was a candidate for the hogs' lunatic asylum. Twice he'd been grabbed, once by the ears and once by a leg, but his liveliness and the grease had got him clear. About half of the boys had given up the job, and was making for harbor behind the fence; covered with sand and grease, they was, and red and ashamed. The crowd was pretty nigh as crazy as the pig, only with joy. Even Hartley was laughing out loud—first time I'd ever heard him.

That little chap with the red hair had been right up with the mourners till the third round; then he was stood on his head in the scuffle and left behind down by the ropes in front of where the Barrys was. The rest of the chasers were scattered around the other end of the field, with the pig doing the grand right and left in and out amongst their legs. One of the boys—that big lanky one whose cheeks needed mowing—made a flying jump and dove head first on top of the critter's shiny black back. In a shake he was the underpinning, so to speak, of a sort of monument of boys, all fighting like dogs over a woodchuck.

Next thing I knew the pig shot out from underneath the pile same as if he'd been fired out of a cannon. He was squealing when he lit, but his running tackle hadn't been hurt any. Down the field he went and the only one of his chasers in front of him was that little red head. He makes a grab, misses, and the pig keeps straight on, right into the crowd of men and horses and carriages.

"Look out!" yells everybody. "Let him go!" But that little shaver wa'n't built that way. Under the ropes he dives, right where the jam of wheels and hoofs was thickest. The Barry coach horses rared up and jumped and backed. You could hear wheels grinding and men yelling and women screaming.

(To be continued)

Dere editur.—i dont believe in high Schools. The pennsylvania Farmer good enuf for me. In your issue of late date you print a piece "Plant Lice in Spring." Can you furnish me with 10 sense wurth of sede?—Hanner, Hopetown, Wis.

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Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., May 11, 1914.

Limited arrivals of fancy print butter were cleaned up at top prices, but the under grades continued dull and ruled in buyers' favor. The egg market was quiet but supplies of desirable stock were under pretty good control and values steadily maintained. The poultry market was quiet but steady under moderate offerings. The fruit and vegetable markets were quiet with ample offerings at revised prices.

Butter.—Western creamery, 29c; extras, 27c; firsts to seconds, 23@25c; special prints 34@36c; near-by prints 30c.

Eggs. — Candled 23@25c dozen; extras, 22c. Current receipts at $5.85 per standard case.

Poultry.—Fowls, 16½@17½c; old roosters 12@13c; chickens 30@35c; pigeons, young, 18@22c.

Dressed Poultry. — Western fowls 13@18c; roosters, 14c; squabs $2@4.65 per doz.

Vegetables.—White potatoes, Pa., 90c@$1 bu; new, $1.00@5.00 bbl; onions, new, $1.75 @2.25 per carrier; peppers $1.50@1.75 per carrier; eggplant, $2.00@3.00 per crate; lettuce, 50@$1 per hamper; homegrown, $1.00 @2.00 bbl; beets 3@5c per bunch; sweet potatoes 40@50c per hamper; string beans, $1.00@2.00 per hamper; squash $1.00@1.50 per hamper; cucumbers, $1.50@2.25 per basket; celery $1.00@2.00 per crate; cabbage, new $1.00@2.00 per bbl. crate; asparagus, 10@20c per bunch; radishes, hothouse, 1@2c per bunch; carrots, 3@5c per bunch; mushrooms, 20@30c per lb.; peas, $1.00@2.00 per hamper.

Fruits.—Apples $3.00@5.50 per bbl. Pineapples crate $2.00@3.00; lemons $2.00@3.00 per box; grape fruit $2.00@4.00 per box; oranges $2.00@4.50 per box; strawberries, 10@20c per quart.

Hay and Grain.—No. 1 hay, large bales, $19.00@19.50; No. 1 medium $19.00; no grade, $10.00@12.00. Clover mixed hay, light mixed at $17.00@17.50; straw No. 1 straight rye, $17.00; No. 2 do., $16.00@16.50; No. 1 tangled rye straw new $12.50@13; No. 2 do., $11.50@12; No. 1, wheat straw, $10@10.50; No. 1 oat straw, $10.50@11.00; corn No. 2 yellow, 77 @77½c; wheat, No. 2 red, 99@99½c; No. 1 Northern $1.03½ @ 1.04½; No. 2 white oats 45½@46c; No. 3 white 43½@44c; standard white 44½@45c.

Coffee.—Rio 7s 8¾c; Santos 4s 11⅝c. Mild Coffee.—Cordova 12½@16c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.20; powdered, $4.05; granulated, $3.95; standard granulated, 4c; crystal A, $3.95.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Hams cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10⅝@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs 11⅜@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6⅞c; country, 6¾c; do. dark, 5½c; do cakes, 7c.

Philadelphia Retail

Vegetables.—Onions 15c ¼-pk. Peppers 3 for 10c; eggplants 10@25c apiece; cabbage 5@10c head; lettuce 5@10c; beets new 10c bch, 3 for 25c. Sweet potatoes, 40c ½-pk; white potatoes, new, 20c ¼-pk; string beans 25c ¼-pk; tomatoes 25c per quart; squash 5 @ 10c apiece; cauliflower 25@50c apiece; mushrooms 40c per lb; asparagus 20@40c bunch; cucumbers, 5@10c apiece; celery $1 doz. bunches; radishes 5c bunch; carrots, 5c bunch; peas, 50c ½-pk.

Fruit.—Apples 20c per ¼-pk; pineapples 20@25c apiece; grapefruit 2@3 for 25c; oranges 25@50c per dozen; lemons, 15c per dozen; strawberries, 25c per quart.

BALTIMORE PRODUCE

Baltimore, Md., May 11, 1914.

In the Baltimore wholesale market butter, eggs and poultry were steady.

Butter.—Creamery, fancy 27@27½c; do. choice 25@26c; prints, 27@29c; blocks, 26@28c; Maryland and Penna. rolls, 16@18c; process, 20@22c.

Eggs.—Near-by firsts, 19c; western, 19c; southern, 18c.

Live Poultry.—Hens 18c; chickens, 20@22c; old roosters, 11c; ducks, 13c.

Vegetables.—Potatoes, Maryland and Pa., 80@85c bu; new, $4.50@5.00 per bbl; beets, 4@5c bch; beans, green $2.00@2.25 per bas; celery $2.50@2.75 per crate; cucumbers, $2.25 @2.50 per basket; lettuce 25@50c per basket; tomatoes, $2.50@3.00 carrier; onions, $2.00@2.25 per sack; eggplant $2.50@2.75 per crate; cabbage, $2.50@2.75 per crate; asparagus $1.20@1.80 per dozen bunches; radishes, 25@50c basket; rhubarb, 2½@3c bunch.

Fruit.—Apples, $3.00@4.50 bbl. Grapefruit $2.50@4.00 per box. Oranges $3.25@3.50 per box; strawberries, 8@15c per qt.

Grain.—Wheat No. 2 red western 98c; spot, 98½c; corn yellow shelled, 78c; oats, standard white, 44@44¼c; No. 3 white 43c; rye, 60@73c.

Hay & Straw.—Timothy No. 1, $19@19.50; No. 2 timothy $17.50@18.00; do. No. 3, $15.00@16.50. No. 1, clover $16.50@17.00; No. 2, do., $14.00@15.50; No. 1, tangled rye straw, $12@12.50; No. 1 oat straw $11.00 @11.50; No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $28.50@29. Middlings, flour to white $29@31; western middlings, $28.50@29.00; city mills, middlings, $28.50@29.00.

NEW YORK PRODUCE

New York City, May 11, 1914.

Butter stock came in slowly and during the early trading receivers were short of just the class of goods most buyers wanted. Egg arrivals are fairly liberal today and the general demand is only moderate and of a selective character.

Eggs.—State and near-by hennery whites, fine to fancy 22½@23½c; gathered whites 22½c; fair to good 21¼ @ 22c; fresh gathered firsts to extras 21¼@23c; seconds to thirds 19¼@20½c; no grades 18@19½c; mixed 21@22c.

Butter.—Creamery firsts to extras 24½@27c; thirds to seconds 21 @ 24c; state dairy 18@26c; packing stock 14@17c;

Cheese.—Whole milk specials, 14@14¼c; do common to fancy, 11@13¾c; skims 4@11¼c.

Dressed Poultry.—Turkeys, dry, 16@25c; chickens 15@18c; fowls, 14@18½c; old roosters, 14c; ducks 9@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage $1.00@2.00 crate; green beans, $1.00@2.00 bas; carrots $1.50 @2.25 bag; cucumbers 60c@$1.12 doz.; lettuce 25c@$1 bas; squash 25@75c basket; celery $2.50@4 standard crt; onions $2.50 @3.50 per 100-lb bag; tomatoes, $1.00@3.00 per carrier; peppers 50c@$2.75 per box; beets, $2.00@8.00 per 100 bchs; potatoes, $1.50@5.00 bbl; sweet potatoes, 65c@$1.10 bas; eggplants, $1@3 box; asparagus, 50c@$3.00 per doz bunches; radishes, 15@50c basket; rhubarb $1.00@1.50 per 100 bunches.

Fruit.—Apples, $2@6.50 bbl. Grapefruit $1 @3.50 per box; oranges, $1.50@4.50 per box; strawberries 11@14c quart.

Grain.—Wheat, No. 2 red 99½c@$1. No. 1 Northern, $1.04@1.05; corn, No. 3 yellow 75@75½c; oats, standard white 44½@45c.

WILMINGTON PRODUCE

Wilmington, Del., May 11, 1914.

Butter.—Print butter, 35@40c lb. Creamery roll, 40c.

Poultry.—Chickens, dressed, 18 @ 25c; ducks, 15@20c.

Eggs.—20@24c doz.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk. Cabbage, new 5@15c. Sweet potatoes 10@15c pk. Onions 20@25c ¼-pk; new 20c [illegible]. Eggplants 10@15c ea. Peppers 20@40c [illegible]. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch; string beans, 20c ¼-pk; peas, 25c ¼-pk; spinach 10c ¼-pk; asparagus, 35@40c bunch; tomatoes, 15@20c quart; squash, 10c each; kale, 8c ¼-pk; parsnips, 5c bunch; cucumbers, 10@12c each; turnips, 5c ¼-pk; radishes, 5c bunch.

Fruit.—Apples, 15@25c ¼-pk. Pineapples 20@25c apiece, Oranges, California 20@30c doz. Florida, 35@40c doz. Bananas, 10@15c doz. Grape Fruit, 7@10c each; strawberries 40@50c box; lemons 12@15c doz.

YORK PRODUCE MARKET

York, Pa., May 11, 1914.

The market stalls showed a large variety of spring produce and many flowers for sale. Eggs and butter are plenty, yet continue firm. Southern produce is arriving in large quantities.

Eggs.—19@20c doz.

Butter.—Country, 28@33c; separator, 32 @35c. Milk, 5@6c quart. Cream, 10@12c per pint.

Poultry.—Hens 15@16c per pound Dressed poultry, 40@75c each.

Vegetables.—Potatoes 12@16c ½-pk; 90c @$1.10 bu; cabbage 3@8c each; lettuce, 5 @10c; beets, 3@5c bch; radishes 5c bunch; onions 2 bchs for 5c, 12@16c ½-pk; lima beans, 14@16c qt.; sweet potatoes, 14@16c per ½-pk; lard 14@16c lb.; celery 6@12c; peppers, 8@12c doz; turnips 10c per ½-pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter 20@25c qt; asparagus, 6 @10c bch; rhubarb, 3@5c bch.

Fruit.—Apples, 25@35c ½-pk; strawberries, 17@25c.

Retail Grain Market.—Wheat, $1.06 bu.; corn, 88c; oats, 55c; rye, 77c; bran, $1.60 cwt; middlings, $1.60 cwt.

Wholesale Grain Market. — Wheat, 96c; corn, 74c; oats, 44c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 11, 1914.

Beef Cattle.—A better feeling between buyers and sellers, with the better class of steers held a trifle stronger, were the principal features dominating the market. Pennsylvania stock sufficient for every requirement was mainly on sale.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	3,112	8,925	4,630
Previous week	3,058	7,813	5,143

Best steers	$8.85@9.00
Choice steers	8.60@8.75
Good do	8.25@8.50
Medium steers	7.50@8.00
Common steers	7.00@7.25
Bulls	5.00@6.85
Fat cows	5.00@7.00
Medium cows	4.25@4.75
Thin cows	2.75@4.00

Veal calves steady.

Best calves	$10.00@10.50
Good to choice do	9.00@9.50
Medium	7.50@8.00
Common do	6.50@7.00

Sheep and Lambs.—The top of the market on both sheep and lambs showed an upward revision and there was a good absorption.

Choice wethers	$6.00@6.25
Good do	5.25@5.75
Common to medium	3.50@5.00
Ewes, fat	5.25@5.75
Extra lambs	8.75@9.00
Good to choice do	8.00@8.25
Common to medium	6.00@8.00

Clipped sheep $1 per 100 lbs. lower than wool stock.

Hogs.—A steady feeling prevailed with holdings under good control. Western, $12.00@12.75.

City Dressed Stock.—Every variety of choice and prime meat commanded steady prices, lamb alone closing firmer. Steers 12@14c; heifers, 10½@13c; cows, 9@11c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 11@12c; extra wethers, 13c. Spring lambs 15@16c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 11, 1914.

Cattle.—With a light supply of 95 loads after last week's receipts, the market ruled active and generally 10 to 15 cents per cwt. higher, the light-weight, handy cattle having the most of the advance, the weighty grades selling only steady to strong. Heifers in light supply and sold at about the same advance as steers. Fat cows steady to strong on all grades. Bulls steady with last week. Fresh cows and springers in liberal supply and sold lower. Today's supply was 100 loads. With a fair demand the market ruled steady on desirable grades.

Good to choice	$8.75@9.15
Good 1,300-1,400 lb.	8.50@8.70
Medium to good 1,200-1,300 lb	8.10@8.60
Tidy 1,050-1,150 lb.	8.20@8.50
Fair to medium, 900-1,100 lb.	7.50@8.10
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs	5.75@7.00
Common to good fat oxen	4.50@7.00
Common to good fat bulls	5.50@7.75
Common to good fat cows	4.25@6.75
Heifers	5.50@8.00
Bologna cows	3.75@4.25
Fresh cows and springers	25.00@90.00

Calves.—Veal calves in only fair supply and with a good demand the market closed 25c per cwt. higher. Today's receipts were 700 head, and the market was active and higher.

Heavy and thin calves	$5.00@6.50
Veal calves	8.00@10.50

Hogs.—The supply of hogs during the week has been light and with a good demand the market has ruled active and strong all week, the close for the week being 10 cents per cwt. higher on heavy hogs and 20 cents per cwt. higher on all other grades. Today's receipts were 65 double-deck loads, and the market ruled 20 cents lower than Saturday.

Prime heavy	$8.65@
Heavy mixed	8.70@
Prime medium weights	8.75@
Best heavy Yorkers	8.75@
Light Yorkers	8.75@
Pigs	8.50@
Common to good roughs	7.50@7.90
Stags	6.50@7.00

Sheep and Lambs.—Sheep and lambs in fair supply and with a good demand the market closed 15 cents per cwt. higher on sheep and 25 cents higher on lambs, while spring lambs have been very slow sale at a decline of $1 per cwt. Today's receipts were 22 double-deck loads. The market ruled higher on sheep and choice lambs, but other grades of lambs sold steady with last week. Spring lambs were lower.

Prime wethers	$5.75@6.00
Good mixed	5.25@5.50
Fair mixed ewes and wethers	4.50@5.00
Culls to common	3.00@4.00
Culls to choice lambs	6.00@8.25
Spring lambs	8.00@11.00

BUFFALO LIVE STOCK

Buffalo, N. Y., May 11, 1914.

Cattle.—The week opened with cattle active and higher on light receipts with export and shipping steers in fair demand. Medium butchers were in better demand at a 10@15c advance and so continued during the best days of the week. Mixed butchers were in liberal receipts and higher. The week's close was steady at Monday's prices and prospects good. Today's receipts were 3,000 head, and they sold steady to strong.

Choice heavy steers	$9.00@9.25
Fair to good	8.25@8.75
Yearlings	7.75@8.65
Handy butchers	7.00@8.50
Good to choice fat cows	6.75@7.50
Good to choice heifers	7.50@8.25
Butchers bulls	5.00@7.50
Feeders	6.50@8.00
Cows and springers	30.00@90.00

Calves.—The week opened with a good demand at steady prices. The close was steady to $1 higher. Today's supply totaled 1,800 head.

Choice veals	$10.00@10.50
Lights and thin	6.00@8.75

Sheep and Lambs.—The opening market followed in the line of cattle, being active and higher. Wool lambs were in light supply and firm. There was a good demand for yearlings. Handy-weight sheep were in good demand but heavy and common sheep were dull and slow. Clipped sheep were slow and easy. The week closed 15c higher on all desirable grades. Yearlings were in light supply and firm. Choice sheep were steady. Heavy sheep were slow and barely steady. The closing basis on lambs was $7.75@8. Today's sheep and lamb receipts were 12,000 head and they sold steady with last week's close.

Choice lambs	$8.15@8.25
Yearlings clipped	6.75@7.50
Wethers	6.00@6.75
Ewes	5.25@5.50
Mixed sheep	5.60@5.75

Hogs.—The liberal receipts at the opening and the moderate demand made a rather slow market but prices were 5@10c higher on desirable grades. Pigs were in good demand. On the close the market for the week was higher under good demand. Yorkers sold at $8.95@9. Common hogs were steady. Today's hog receipts were 17,000 head, and they sold 10 to 15 cents lower than Saturday.

Heavies	$8.80@
Mixed and medium	8.80@8.85
Yorkers	8.80@8.85
Light Yorkers	8.80@8.85
Pigs	8.80@8.90
Roughs	7.60@7.75
Stags	6.50@7.25

Horses. — Receipts totaled 550, with active demand for best heavy workers. Medium and common workers were in fair demand Best teams, $650 @ 750; medium, $500 @ 600; fair to good, $350@450.—S.

NEW YORK LIVE STOCK

New York City, May 11, 1914.

Beef Cattle.—Receipts for week 3,200 head. Market steady.

Steers	$6.85@9.35
Bulls	5.50@8.00
Cows	3.50@6.75

Calf receipts 8,200 head. Market active.

Choice	$8.00@11.25
Culls	5.50@7.50

Dressed calves higher. Dressed veals 14@17c.

Sheep and lamb receipts 8,600 head. Market strong.

Sheep	$5.00@6.25
Spring lambs	7.25@8.50

Hog receipts 6,000 head. Market steady.

Choice	$8.80@9.05

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., May 11, 1914.

Hay.—Receipts of timothy hay continue extremely light. The better grades of No. 1 and No. 2 timothy find ready sale at top figures and there is not enough of these qualities arriving to supply the demand which is quite active. Lower grades are dull and hard to dispose of. No. 1 light clover mixed and No. 1 clover mixed can be placed at quotations but clover and prairie are dull.

No. 1 timothy	$18.00@18.50
No. 2 timothy	16.00@17.00
No. 1 light mixed	16.50@17.00
No. 1 clover mixed	15.50@16.00
No. 2 clover mixed	12.00@13.00
No. 1 clover	15.50@16.00
No. 2 clover	11.00@12.00

Straw.—Demand for straw good and readily takes care of what few cars are arriving.

No. 1 Oats	$9.75@10.25
No. 2 Oats	9.50@9.75
No. 1 Wheat	9.75@10.00
No. 2 Wheat	9.25@9.50
No. 1 Rye	11.00@11.25
No. 2 Rye	9.75@10.25

Ear Corn.—Ear corn still very much wanted; arrivals very scarce; everything placed at top figures.

No. 2 Yellow	81½@82c
No. 3 Yellow	78@79½c.

Oats.—Oat receipts and demand about equal; market steady.

No. 2 white	43¼@43½c
Standard oats	42½@43c.
Standard No. 3 oats	41½@42c.

ELGIN BUTTER QUOTATION

Elgin, Ill., May 11, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 26 cents.

NEW YORK MILK MARKET

New York City, May 11, 1914.

The market continues to be unsatisfactory to the dealers, for the surplus is growing slowly, but surely.

The receipts of milk and cream in 40-quart cans for the week ending May 9, were as follows:

Railroad	Milk	Cream
Erie	48,695	3,188
Susquehanna	8,428	394
West Shore	17,312	1,971
Lackawanna	58,150	1,950
N. Y. Central (long haul)	83,304	2,261
N. Y. Central (short haul)	12,170	330
Ontario	39,263	3,833
Lehigh Valley	35,346	1,258
Homer Ramsdell Line	2,310	51
New Haven	7,367	210
Pennsylvania	5,662	156
Other sources	1,680	25
Totals	319,687	15,627

TOBACCO MARKET

It is estimated that some 60 percent of the 1913 crop has passed from the hands of the growers, mainly at prices not at all satisfactory or profitable. Sales are being made at prices ranging from $5 to $8 per cwt. with occasional choice offerings at $9 per cwt. Much was said concerning reduction in acreage and the planting of land in potatoes and other crops but it is noted that the usual number of plant beds have been made and that very few growers will state a positive intention of a reduction. It is probable that not merely a reduction but the elimination of one or two crops and a curtailed acreage thereafter would be to the best interest of growers.

The Seed Leaf Tobacco Growers' Company has issued a statement showing that some 100,000 pounds of tobacco have been delivered to the company. Many other deliveries are promised for the near future. It is claimed that a total of one-half million pounds will soon be held. At a meeting of the members it was found that buyers are in the field procuring many crops for which they are paying advanced prices, which they are endeavoring to conceal. The company now has over 400 stockholders. Explanatory meetings were held at various points in the section. It is unfortunate that local banks seem to be unfavorable to the new company. This is, of course, on account of their affiliation with packers and others who oppose the movement. To cover this adverse feature it is probable that growers will establish a new bank to take care of their business. Attention is called to the fact that the movement for this bank emanates from a spirit of necessity and not of antagonism.—H. E. Tweed, May 11, 1914.

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Serous Abscess.—Have a young mare which has undoubtedly bruised her breast when reaching for hay over manger. Trouble was first noticed about 3 weeks ago in shape of a large soft swelling which, when opened, contained nothing but water. As soon as water is out, lump is almost gone, but fills up again as big as ever in a day or so. Can you advise me what to do to stop water from forming? B. B. L., Great Meadows, N. J.—Make opening large enough to drain properly and inject 1 part carbolic acid and 30 parts water, twice a day. Apply iodoform to wound each time it is opened.

Rheumatism—Fistula of Withers.—I have a horse, 6 years old, that goes stiff in shoulders. This soreness seems as if it might be rheumatism as his lameness or soreness is much more severe at one time than another. I have another horse that I believe has fistula at top of shoulder blade. This sore was almost healed two weeks ago, but is now quite sore. A. S. D., Silverdale, Pa.—Give your first horse 2 dr. salicylate of soda and 1 dr. powdered nitrate of potash at a dose in feed, 3 times a day. Rub his shoulders with spirits of camphor, twice a day. Are you sure that the whole trouble is not in his fore feet? If you believe he is hoof-bound, apply lanolin once a day. Apply equal parts tincture iodine and camphorated oil to bunch on withers of second horse every day or two.

Tender Shoulders.—I have a work horse that has what I believe is a good fitting collar to work in, with sweat pad underneath, yet he is troubled with galled shoulders. G. H. Q., York, Pa.—Dissolve ¼ lb. acetate of lead, 3 oz. sulphate of zinc and 2 oz. of tannic acid in a gallon of water and apply to shoulders, 4 times a day. Also apply 1 part carbolic acid and 30 parts water to sweat pad and face of collar once a day. It is important to keep collar clean.

Sore Neck—Knee Sprung.—I have a horse, about 10 years old, that is continually troubled with sore neck. The remedies I have applied do not help him. He is also very weak in his knees. Is there anything that I can apply that will help? N. T. S., Navarre, Pa.—Dissolve ¼ lb. acetate lead, 3 oz. sulphate of zinc and 2 oz. carbolic acid in one gallon of water and apply to sore shoulders and neck, 3 times a day. Keep the collar and sweat pads perfectly clean. Apply alcohol to weak knees twice a day; or blister tendon with cerate of cantharides.

Vertigo.—I have a heifer, 7 months old, that acts queer when let out to water. She holds her head to one side and runs until she bumps against some object and falls. In about five minutes it is all over until she has another spell, which may come on in a few days or a week or two. A. K. S., Wazall, Pa.—If her bowels are costive, give 4 or 5 oz. of epsom salts every 4 hours until her bowels act freely. Then give ½ dr. bromide of potash and ½ dr. potassium iodide at a dose, 3 times a day.

Stringy Milk.—One of my cows gives stringy milk, but appears to be in perfect health. S. A. C., Mifflintown, Pa.—Give her a dessert spoonful of powdered nitrate of potash and 2 tablespoonfuls bicarbonate soda at a dose in feed, 3 times a day. Hand rub udder and milk her clean 2 or 3 times a day.

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Headle Dr T. J.
Rutgers College
814

Profitable Summer Pasture for the Pigs

The farmer who makes a specialty of pork production has long since learned by comparison, if not thru the keeping or accurate accounts, that he can grow his pig crop to maturity much cheaper where fed on suitable pasture than where confined in a small area and fed altogether on a grain ration or in a poor and insufficient blue grass pasture. This class of farmers has learned from experience that if suitable forage is not available in the crops already growing upon the farm, it will pay to sow supplementary forage crops to provide summer pasture for the pigs. The farmer who does not make much of a specialty of pork production has not, in a great many cases, learned these important lessons, and does not appreciate the fact that even tho not many hogs are produced on the farm, it will pay to provide these conditions, even if supplementary forage crops must be sown to provide them.

As previously noted, accurate cost accounts in the matter of production are lacking on the great majority of farms. In a great many lines of production, this lack of cost figures cannot be well supplied from outside sources, but fortunately on this particular proposition of providing summer pasture for the pigs, accurately kept cost accounts are available thru carefully conducted experiments at different experiment stations thruout the country. Perhaps the latest and most complete of available records of this kind is that made public last year by the Iowa Experiment Station, and the results shown by these records will be sufficient for the purpose of this article, which is to demonstrate the profit of providing suitable summer pasture for the spring pig crop.

Alfalfa the Best Pig Pasture

Undoubtedly, where it is available, alfalfa is the best possible summer pasture for the spring pig crop. This was found to be the case in the experiments above mentioned, the low record cost of gain being made upon alfalfa pasture where the alfalfa was not stocked so heavily but that hay was cut from the same and credited at current prices. Under these conditions the low record cost of gains made on alfalfa pasture was $2.88 per hundred pounds of gain with corn figured at 50 cents per bushel, or $3.46 per hundred with corn figured at 60 cents per bushel. The same relative cost for a previous trial in which the pasture was not credited with the hay cut from same as compared with the figures just given, was respectively, $3.96 and $4.60 per cwt., with corn figured at the two prices above given. The average of production costs for the two years was $3.42 per cwt., with corn at 50 cents per bushel, and $4.03 per cwt. with corn at 60 cents per bushel. The average net profit derived from an acre of alfalfa pasture, estimating corn at 50 cents per bushel and hogs at $6 per cwt, was $71.74. Figured in another way, the average price per bushel which the hogs paid for corn consumed, with hogs at $6 per cwt., deducting cost of alfalfa pasture, including rent of land, was 93 cents per bushel.

RAPE MAY BE SOWN IN DRILLS AND CULTIVATED WHERE THE HOG LOT IS SMALL.

June Clover a Good Second

Medium red clover is a fairly close second to alfalfa in results with growing pigs. With corn figured at 50 cents per bushel, the average cost per hundred pounds of gain in an average of four trials on red clover pasture was $3.99 per cwt., and with corn at 60 cents per bushel, $4.35 per cwt., while the average value of an acre of clover pasture with corn at 50 cents per bushel and hogs at $6 per cwt., was $57.21. Figured in the price returned per bushel of corn, after payment of cost of clover pasture, including rent of land at $6 per acre, on an average for four trials the price received for corn fed on clover pasture was 87.6 cents per bushel.

June Grass and Timothy Pasture

Where alfalfa or clover pasture is not available, as it is not conveniently available for the pigs upon many farms, the question arises as to whether it would be more profitable to pasture the pigs on an old June grass or timothy sod, such as is usually found in the hog lot, or sow some special crop for summer forage. In the Iowa trials it was demonstrated that blue grass or timothy pasture was not as economical forage for pigs as the other pasture crops mentioned, the cost of gains on such pasture being $4.09 per cwt. with corn at 50 cents per bushel, and $4.77 per cwt., with corn at 60 cents per bushel, in comparison with the figures above given for alfalfa and clover, but even this pasture had a value of $31.85 per acre above rental value with corn at 50 cents per bushel and hogs at $6 per cwt.

Dwarf Essex Rape for Pigs

Where special crops must be grown for hog pasture, rape is undoubtedly the most suitable single

(Continued on page 8)

PEAS AND OATS MAKE EXCELLENT PASTURE FOR THE GROWING PIGS. A BUSHEL OF EACH WITH TWO OR THREE POUNDS OF RAPE MAKES A GOOD COMBINATION.

Farm Crop Notes

By R. P. KESTER.

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, fertilizers and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

THE HIGHEST SATISFACTION

Part of the enjoyment of life comes from the entertainment and amusement furnished by others. We enjoy the singing, the acting, the sermons of others. They often thrill and inspire. Our appreciation is engaged and we enjoy the experience. We enjoy travel, reading, playing. But the highest enjoyment and the feeling of greatest satisfaction is experienced when we behold the result of successful effort. Those feelings are the most valuable rewards of life. It is then we hear the Divine approval, "well done." There is no keener enjoyment, no greater satisfaction. To realize that we are successful partners in the work of creation makes life worth living.

The thrill with which the housewife views her light, fluffy bread, her nicely-browned pies, her well-cooked meals overbalances the drudgery of housekeeping, especially when there is added to this the spoken appreciation of husband. The farmer receives more enjoyment than the dollars will buy as he walks about in the evening, or on a Sunday, and views the success of his labors. If we fail to realize this, we are unsuccessful farmers, no matter how much profit in money we make.

Across from my writing room window is the garden of a neighbor. He has a well-kept, modest home. He works hard all day and every day. His evenings are spent working in the garden. There he plants and weeds and waters that he may rest and glow with the satisfaction of seeing things grow and develop. As he stands there now in the twilight, viewing the splendid lettuce and onions and other promising plants, I know he is at peace with himself and all the world. He has the feelings and broad view of a creator, and he will go to his bed with a feeling of satisfaction that many, many will not have tonight.

A writer in a contemporary journal well expresses these sentiments in the following extract from a talk to a son:

"Once in a while, in every real man's life—not so often as to let him get used to it—something happens to fill him with honest gladness. I've known such times. Once at my marriage; again when you were born; yet again when I brought you and mother to this farm and set about making our own home. And here's another thrill of the same sort. My son is to be a farmer.

"I'm genuinely glad, thru and thru. I don't say this merely because I believe farming to be a good business. The soundest of all arguments in favor of farming as a life work goes far deeper than the question of making a living and growing rich out of surplus earnings. It isn't a matter of poetic sentiment, either. It's what you might call practical sentiment—applied sentiment, rooted in reason and sustained by experience.

"If any man on earth today is entitled to hold up his head and stick out his chest it's the farmer, who, with his own hands and on his own land, has brought a good crop thru to the harvest. There's a solid satisfaction in that—greater than any man may guess who hasn't done it himself. The satisfaction isn't in the reward that's to come; it's in the actual performance. To look out across an October cornfield in the shock and to say to myself, 'Eighty good bushels to the acre!'—there's the satisfaction I mean, and not the stolid feeling that comes when the surplus grain is sold and the money put in bank.

"I've made good money out of "deals" at odd times—trading in cattle and horses, or taking a profit out of a piece of land I've bought and sold, or something of that sort—but the pleasure I've got from those profits hasn't amounted to much. I've never put any brains into my trading beyond a little shrewdness, a little cold, calculating cleverness. Those trades of mine haven't added one penny to the world's wealth. They've created nothing. They've merely shifted dollars from some other man's pockets to mine. The world isn't any better off, in any way, on account of them.

"The dollars I'm proud of are those I've made by growing my crops. There's no three-shell business about that. That's creation. There's nothing mean in it. When I've planted a bushel and a half of wheat on a well-prepared acre and have made it give me 35 or 40 bushels of increase, I've done something. I'm not ashamed of owning the dollars that are earned in that way. I'm proud of them. The long and short of it is that I'd rather own one dollar made by crop growing on my farm than $10 made out of a shrewd trade. Does that sound to you like a piece of crazy sentiment? All right, but that's just exactly the way I feel about it.

"To put it in plain words, David, I take my greatest comfort in farming because I feel that my harvests, wrought with my own hands, have divine approval. I've never been able to feel so about my land speculations or my horse trades. I've managed these on my own hook; but the hand of God is in the increase of the fields. That's frank speech. I shouldn't wonder if it reveals me to you in an unfamiliar light. You've never had particular reason for thinking of me as a devout man. I don't believe you've heard me pray aloud in all your life. And I know I've never been able to talk about religion as some men can, explaining and defining their faith in a glib, cocksure way. Mine has no definitions, no forms, no rules; but it's in me just the same.

"Often and often, when we've been sitting around the fire at home on a winter's night, you've seen me put down my book toward bedtime, exchange my slippers for boots, button my coat around me and go out for a last look at things. I've done it for years, till mother has come to make a jest of it as a fussy old man's habit. But it isn't that. I've never told her or anyone else what that simple little nightly ceremony means to me. I think it's fit to be called a religious observance. It's just my way of saying my prayers.

"I go into the big barn and stand listening to the sleek horses nosing the hay in the mangers, to the deep breathing of the contented cattle on their clean straw beds, to the low bleating of the sheep in their snug sheds—every beast of them well fed, comfortable, friendly. If the night happens to be cold, with a driving storm blowing, so much the better for my state of mind. Overhead are the full mows; around me are the full cribs and bins—plenty, plenty!

"Going back to the house, I've been used to stealing a look thru the living-room window at you and Mother sitting in the glow of the firelight. And then comes a quick thought of the full cellars and storeroom and pantry—plenty! A stickler might find a savor of selfishness in the "Thank God!" I've been used to saying under my breath at such times, but it's been the fervent expression of a feeling as devout as any man may ever know in this life. And I'm not beholden to any man or to any lucky circumstance for this rich abundance. Nothing intervenes between me and the fact. I've brought it about myself, with no obligation to any but God.

"That's the great feeling, David, to reward a man for his year's work. I'm glad that you're to do this work, so that you may have your own share in the feeling. I can't wish for you any profounder satisfaction. For myself, if I had life to begin all over again, with my lifetime of experience to guide me, I'd stick to farming, tho rewards were cut in half and the hardships were doubled. On my word, I would!"—R. P. K.

APPLYING FERTILIZER TO CORN

There are several different methods of applying commercial fertilizer to the corn crop practiced, and most, if not all of them are open to some objections. The method of applying it to the hill only seems to be the most objectionable one of all. The corn plant if given a chance will send roots out in every direction from the hill much farther than is generally supposed. This is necessary in order that the plant have sufficient feeding ground to obtain both water and plant food sufficient for the proper development of the corn plant. If the fertilizer is all put in the hill a proper root development is discouraged. Then if a sudden dry spell sets in there is not sufficient space covered by the roots to furnish moisture, so the crop is burning up.

If the fertilizer is distributed all thru the soil, root development is encouraged. The plant has a much larger space from which to draw moisture and we have no trouble with the fertilizer burning the corn. Then again, if a high grade fertilizer comes in direct contact with the seed there is danger of the fertilizer killing the germ of the corn.

A few years I tried different fertilizers on a few small plots with the fertilizer applied to the hill. The same seed was used as was planted all around these plots. There was almost a perfect stand in the field while there was not a half stand where the fertilizer was applied to the hill. The corn that did come up grew much faster where the fertilizer was applied to the hill for the first few weeks but by the time the ears began to form the blades on these plots were dead nearly to the ear, while the surrounding corn had green blades nearly to the ground.

The most successful plan that I have used is to apply the fertilizer all over the ground before planting the corn. I use a common wheat drill to distribute the fertilizer and apply about 200 pounds per acre. If manure is also applied or if it is a sod land I use a 16 percent acid phosphate alone and get as good results from this cheap fertilizer as I do when I use a complete fertilizer, and at a much less cost.

I have distributed fertilizer after the corn is planted a few times but it has always been a failure. I did not get pay for my fertilizer in increase of crop. If the fertilizer is put in the soil there is little danger of the corn roots not finding it.—A. J. Legg.

FERTILIZING TIMOTHY

The only time to apply commercial fertilizer to timothy is in the Spring, when green growth has started and the moisture condition of the soil is good. The fertilizer may be broadcast or drilled, the practice not seeming to make any difference in the results.

There are, in general, three conditions which should be met before fertilizers are likely to be profitably applied: First, there must be sufficient plants on the area, or a root development great enough, to respond to the application. It doesn't pay to apply fertilizers if there is practically no or very little timothy on the field; fertilizers will not make new plants where there were none before. Second the yield should at least be from three-fourths to one ton per acre before the treatment. A smaller yield indicates the presence of many weeds crowding the grass, or too few plants to occupy the land even with increased growth. Third, the soil should be productive. Fertilizer applied on poorly drained soil or soil otherwise in a poor physical condition, causing low productivity, will not likely be a profitable practice either when used as hay or any other crop. Stating these three conditions affirmatively we should say that fertilizer applied to grass may be expected to pay when there is a sufficient number of plants on the ground, when the yield is at least three-fourths to one ton of hay per acre, and when the soil is fairly productive.

The fertilizer recommended for general use is one that is high in nitrogen. If the land is well supplied with phosphoric acid and potash, nitrogen alone, applied to best advantage in the form of nitrate of soda, will probably give best results; otherwise a complete fertilizer should be used. The formula already cited in Pennsylvania Farmer of May 9, which was 9:4:7, may be best made up at home by using the following proportions; 200 lbs of nitrate of soda, 100 lbs. of acid phosphate (P_2O_5) and 50 lbs. of muriate of potash making 350 lbs. of a complete fertilizer to be applied per acre. Where the nitrate of soda is used alone, the quantity used may vary from 100 to 200 lbs. according to conditions of soil and meadow. The complete fertilizer should not cost more than $6.50 per acre, and where the nitrate of soda alone is used, the cost will be correspondingly less. Where the practice is carried on for the first year, applications should be made at different rates and in different proportions to determine, at least in a general way, which combination will give the best results.—John H. Reisner, N. Y. College of Agriculture.

WEIGHT OF HAY IN MOW

A short time ago I bought some hay in the mow and I am having a controversy as to how many cubic feet should be allowed for a ton. The hay was timothy and clover mixed, and in the bottom of a well-settled mow, 18 by 36 feet. How many cubic feet is it usual to allow for a ton of well-settled hay? Are beams and joists usually figured out in making the computation? R. H., Almond, N. J.

The quantity of hay in a mow can only be approximately ascertained by measurement. It is not a satisfactory basis upon which to buy or sell hay, but when used the rule of measurement should be definitely understood by both parties when the deal is being made. The old rule is as follows: Good timothy hay, well settled, 350 cubic feet per ton; partly settled, 400 to 450 cubic feet per ton. The conditions named above should call for an estimate of 350 cubic feet per ton.

Fruit Growers Organize.—The Germantown Co-operative Fruit Growers', Inc. is the legal title of an organization of fruit growers recently perfected at Germantown, N. Y., by Marc W. Cole, of the department of agriculture.

Poultry

MAY IN THE APIARY

It matters not whether bees are kept for the honey they may secure, for their use as pollenizers or for recreation or study, a prosperous condition in the hive is desirable. To secure this condition there must be no lack of food for the young bees and the queen must be allowed all the empty comb she can possibly use for eggs. These, when housed in a good hive, will usually be all the bees need provided there is no disease present.

The baby bee disease, foul brood, has aside from neglect, done more to reduce the number and efficiency of bees in New Jersey than anything else. While this is true of New Jersey it is none the less true of very many other states. While both forms (European and American) of foul brood are found in New Jersey, the European form is by far the most widespread. Usually in May when the bees are using large quantities of old stores for feeding the young and rapidly reducing the amount of honey stored in the hive, foul brood attains its maximum height because of the large amount of infected honey being fed to the brood. This is the time when the beekeeper must give close attention to the brood in order that he may detect the first appearance of this dread malady and check it before it has occasioned great loss.

It is unnecessary to discuss the symptoms and treatment of this disease here as a request to the Bureau of Entomology at Washington will bring Farmers' Bulletin 442, "The Treatment Of Brood Diseases Of Bees" which contains a thoro discussion of this subject. Let it suffice here to state that foul brood is very contagious in bees, the contagion being carried from hive to hive by the bees of stronger colonies robbing the infected honey from the colony which has been weakened by disease.

A number of states have provided for an inspector who examines the bees, advises the owner if any disease is present and the best method to eradicate it. Any beekeeper in New Jersey can have the services of the inspector without cost by making a request of Dr. T. J. Headlee, State Entomologist, New Brunswick.

When the bees have attained the prosperous condition mentioned at the beginning of this article, swarming is the next thing in order. At one time swarms were hailed with delight, as it meant another stand of bees, but swarming has no place in modern beekeeping. Investigations show that in many if not all cases swarming means a great reduction of the surplus honey crop. Swarming may be allowed to the extent of one swarm from each old colony, and if the old and new colonies are handled properly the surplus crop will not be greatly reduced, but swarms other than the first from a colony are always unprofitable.

In hiving swarms the common custom is to put the hive with the swarm on a new place, leaving the old hive alone. Under this manipulation the old hive may cast one or two more swarms. These afterswarms are never profitable. They very rarely are able to survive the winter and they so reduce the strength of the old colony that it is not able to [illegible] surplus.

Fortunately there is a very simple method of preventing afterswarms, which is to place the hive containing the new swarm where the old hive stood which cast the swarm, first moving the old hive to a new stand. This draws off the field bees from the old colony, which fielders return to the old stand, so reducing the old colony that it will have no further idea of swarming. As the fielders join the new swarm it is thereby strengthened so it will produce a maximum crop. All efforts are directed towards getting the surplus honey from the new swarms, when swarming is allowed, as the old colony will not produce a surplus except where there is a heavy fall flow of nectar.

Not infrequently the swarm issues unobserved and the owner does not know from which hive it came. To determine this so the proper manipulation can be given the old colony, put a small teaspoonful of flour into a cup and fill the cup half full of bees from the clustered swarm and after shaking the bees in the cup to get them well floured throw them in the air. Now watch the entrances of the colonies. The hive before which most floured bees are seen fanning is the hive which cast the swarm.—E. G. Carr, N. J. Deputy Bee Inspector.

SOME HELPFUL POULTRY POINTS

In the past quarter of a century, during which time we have been on our present farm home, some things in the care and keeping of poultry have been pretty thoroly impressed upon us. We began with 25 common hens. Now we have not far from 500 well-bred hens.

One of the things we have learned, is that it pays to have good stock. Fifteen or twenty years ago we had what we looked upon as pretty fair hens; in fact they did lay very well. My wife was at that time taking care of the birds. She kept an accurate account every day of the number of eggs taken from the house, feeding the best she knew and recording the dozens sold, with the price in each instance. We knew then that there was money in hens; but it was after we began to change the mixed stock for birds that were better bred that we really came to know the advantage of putting money into choice stock. Our present hens are of the best strain of laying stock, and they have laid generously for the past two years. It is one of our regrets that we lost so much time with the mongrel hens.

We are learning things about feeding also. We used to feed mostly mashes in the morning. No more mashes for our folks. The hopper system has full sway for most purposes. Corn and wheat and perhaps buckwheat may be scattered about in the litter, but the rest must go thru the hopper. While on the feed question let me say that we do not intend to feed any but the best and the purest feed we can get. It is a mistake to think that a hen will eat anything. So she may, but what will be the result and what kind of eggs will poor food make! I have no doubt that the flavor of an egg may be greatly modified by the kind and quality of the feed given the hen. When we think how many eggs are used as food for the sick, the importance of feeding superior foods is obvious. Then, too, the health of the hen depends largely upon what she has to eat. Poor food will affect a hen quite as readily as it will a person. You can buy poor stuff cheaply, but it is costly in the long run.

Again, one of our best lessons bears on the home of the birds. No more "tumble-down shed" roosting for us! Our houses are the best we can give the birds. Cement floors, large windows and as good a ventilating system as we know how to devise, together with lots of floor space, for crowding is one of the worst things possible! these are some of the features of the houses we are using now. Two years ago we built the first really up-to-date house and a year later another, both 30 feet long. As soon as possible we shall put up another of the same size, as well as a cement incubator house.

But there is still another point and that is the range for the birds. We have given the birds all the room they wanted to travel over. A good share of our success may well be attributed to this one fact. I believe now that if a man has a thousand dollars to lay out in setting up a poultry business he had better spend a good share of it for land and work up his flock gradually as he can. For a couple of years we have had a big piece of corn right near the hen houses. The birds run thru this and get no end of good out of it. It is shady, too, and that counts for a good deal.—E. L. Vincent, Broome Co., N. Y.

POULTRY QUERY

My hens look fine. Have large range and are well-fed, but I noticed one of them breathing hard, as if choking, and then gaping. It was fat and laying. I gave lamp oil also rubbed it on head and neck, but it soon died. A second one I isolated, fed warm feed and gave castor oil and carbolic acid in water to drink. She lived over a week, gaping and breathing harshly, and grew weaker, so I killed her. Found a third one which I killed immediately. This one would dress about 9 lbs. Droppings looked O. K. Liver might be trifle pale and darker at edges, but can see nothing else wrong. Can you tell me what is the trouble and what to do. Have a large flock of barred rocks and have used carbolic acid in all water since above trouble.—Mrs. J. W. G., Sharon, Pa.

I am not able to determine from the symptoms given what ails your hens. In a case of this kind the observer nearly always fails to note the really important symptoms. In the first place you should examine the windpipe and lungs and see that there is no fatty enlargement that is pressing on the windpipe or breathing organs at any place. If there is any swelling or any obstruction in the throat it might be a case of diphtheria, but your examination will have to determine that. I think it will be just as well to discontinue all drugging. Drugging poultry of any kind is bad practice at any time and especially so when the drugging is done on general principles without any knowledge of what you are drugging for. Drugs often kill fowls that might otherwise recover.

Note if the ailing fowls breath thru the mouth. If they do and you find the throat in good condition it is possibly a case of pip. This is partially a digestive disorder. Give the flock a liberal feeding of well parched or charred corn twice a week and if not already available see that the fowls are getting plenty of green grass and do not forget to give a bit of beef scrap and wheat bran mixed dry in a box where they can help themselves. If you find it is a case of diphtheria, kill all ailing birds and burn or bury deeply.—J. T. Campbell, Crawford County, Pa.

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The Marketing Problem.---Is it the Commission Man?

Several years ago I was standing in a commission house in Philadelphia, pretty much surrounded by barrels of apples that had been shipped from the section in which I live. A customer entered, was shown some Winesap apples, priced them and was told that they were worth $3.20 a barrel. At the same time the commission man, in a rather dejected way, called his attention to a label pasted on the barrels, stating that the apples were the "same size from top to bottom of the barrel." The customer grinned, said nothing, but finally bought 10 barrels and had them sent to another part of the city.

Now, it so happened that I had been present when those barrels were filled, had seen the excellent grading work and the care taken to reject culls, and I wanted to have a talk with that buyer and get information from him if I could. So, a day or two afterwards, I went to his place and priced the apples, then being sold, and found by rapid calculation that they were being retailed at $9.60 a barrel. Quite a difference that. Then I told the retailer that I had seen the apples packed, and asked what he thought of them. He was enthusiatic about the fruit as it turned out, but plainly said that he didn't believe the label when he read it. "If I had thought that label true," said he, "I would have been willing to pay $5 a barrel."

That was food for thought; and I resolved again to do some investigating. So I wandered around among grocers in that section, and then took a car and found another section, and so on. For several days, I visited retailers to get their point of view on the apple question. With one voice the retailers told me that it was impossible to find a barrel of "straight packed" apples in the open market; that after you get below the second layer the balance of the barrel is composed of ungraded apples, largely of culls, often of apples that are partly decayed,—stuff that should never see the inside of a barrel. Several men opened barrels to show me, dug into the middles and invariably there was the same shameful story,—a handsome front and a rotten filler, the first two rows specious enough, the balance any old thing that happened to be within reach when the packing was done. Sometimes you had to dig below the second row to get facts but not usually.

Then I went back to the commission men and talked with a good many of them, and got the same story. The most hopeful of the lot put the good packing at 5 percent and the dishonest packing at 95 percent; others would not admit such a high proportion of honesty. I hold no brief for the commission man; but, were I in his place, I think I would also be inclined to hurry over the job of selling such stuff and would feel little sympathy for the woes of the shipper. The retailers told me that they would gladly pay from $1 to $1.50 a barrel more for straight-packed apples rather than take their chances "on the street." The commission men told me that growers who put their names and addresses on their barrels and consistently packed sound fruit, of a uniform size, very soon put their fruit in a class by itself, and got fancy prices.

Nor, after mature consideration, did it seem to me that the retailer is so blameworthy as he seems to be at first blush. There is a big difference between that $3.20 we got and the $9.60 the retailer got; but suppose our apples had been of the usual character of packing. He would have received at the rate of $9.60 a barrel for the first two layers; and from that time on he might have had a hard time to make a reasonable profit, by culling, throwing out and regrading.

Last year I had a chance to watch the sale of apples at retail where, side by side, well graded, sound apples were offered at 40 cents a half peck, and ungraded, bulk apples of the same kind, were offered at 25 cents. It was highly illuminating to see the housewives pass by the ungraded and unattractive stock and pay the higher price for the better stock. The difference was 15 cents a half peck. The grocer figures on 11 pecks in retailing a 3 bushel barrel; so he was getting $3.30 more a barrel for the fine stock than for an equal amount of the poor stock, which paid him a handsome profit above the extra cost of the good fruit.

The ungraded stock was full of runty apples, many were wormy, some badly specked and many blotched with the mildew that attacks uncared for Baldwin trees. Now, as a matter of fact, the housewife was getting a larger net quantity of apple meat from the good apples at the higher price than she would have gotten from the same amount of money spent for the poorer apples, and she was getting meat of high quality, capable of being made into tasty pies and sauce, instead of getting meat from partly decayed, wormy and mildewed stock. And I rather think she was aware of the fact. At any rate, it was highly educational to me to see how uniformly the poor fruit was passed by and the good taken and it was equally enlightening to the grocer. For I had placed the barrels with him on an agreement that he make this side by side test, at the prices named, and promised I would take back all apples he did not want. Of course, instead of turning back apples, he laid in a larger supply.

The whole business of marketing fruit is suffering from the common practice of those marketing it; and it is high time that in this country, as in Canada, all dishonesty be made a punishable offense, or at least some method be determined for the protection of fruit honestly packed and graded in its competition with that which is intended to deceive the retailer and the consumer.—Abram Bunn, Bedford Co., Pa.

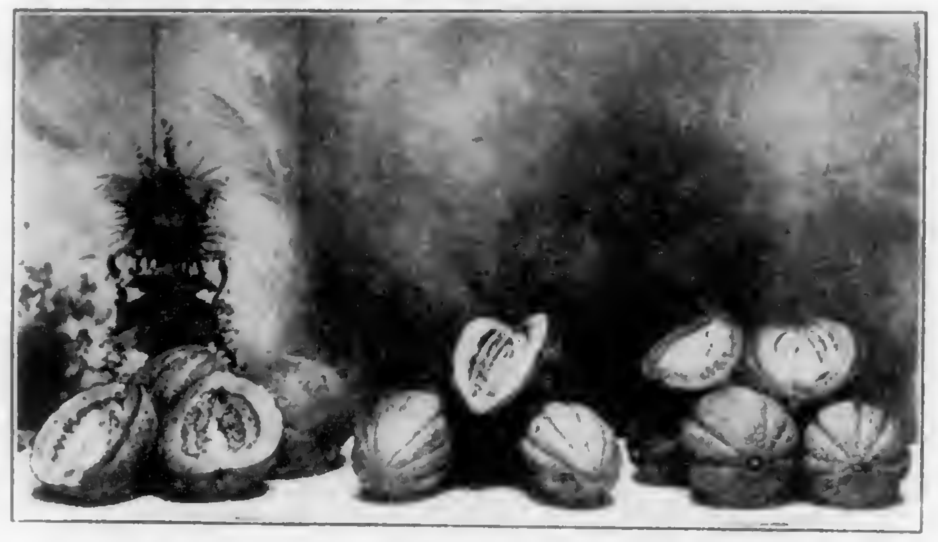
CANTALOUPE GROWING

Many who try to produce cantaloupes lose sight of the factors that must be considered in order to grow melons of good quality and high flavor. Briefly, these include a good variety and tested or pedigreed seed and soil of proper constituency. Sandy loam soil with a well drained or porous subsoil is essential for the best results. The soil should be fairly deep and well filled with humus making material and a southern or southeastern exposure is best. The cantaloupe is a hot weather plant and will not do its best when located where cold winds sweep over it or where heavy cold rains saturate the soil shutting out air and warmth. The soil, too, must not be acid in any degree. It must be neutral or slightly alkaline; hence if there is any doubt in that direction lime should be used when preparing for this crop.

Sunlight is a prime factor in producing high quality fruit. The only reason that the cantaloupe grown in Colorado or Arizona is of better flavor is because of abundance of sunshine and absolute control of water supply. When it is remembered that sunshine is a prime factor in the formation of starch and sugar its beneficial effect can readily be understood.

In the humid climate of the east we do not have continuous sunshine, hence the grower must make conditions as near ideal as possible. This can be done largely by feeding.

The plant does a great part of its work thru the leaf with the aid of the sunlight. The eastern grower should strive for a large leaf surface so that the plant can do more work in the way of manufacturing sugars and succulence with the amount of sunshine that is available. This can be accomplished almost any season by feeding.



UNIFORMITY OF SIZE, SHAPE AND QUALITY SPELLS PROFITS IN CANTALOUPE GROWING.

After selecting the site for the cantaloupe planting broadcast the area with composted stable manure before plowing, preferably a month or six weeks before, so that the late frost and spring rains can separate it. If there is no cover crop growing on this site it is good practice to run the disc or cutaway harrow over the ground and thus mix and incorporate the manure with the soil. It helps keep the soil loose and aids it in retaining moisture. The plowing, harrowing, etc., should be thoroly done. Mark out rows from east to west unless the check row system is to be used; but in either case the row at planting time should run from east to west. After having placed some high grade fertilizer in the hill or row, make up rows by plowing two furrows together like a pitch roof of a building.

Soak about half the amount of seed necessary for a field in warm water for 12 hours. Drain off the water and keep the seed moist and warm for 24 hours longer when most of them will begin to open. Now add an equal number of dry seed and mix the whole together. In sowing, insert the foot with toe pointing upward into the south side of the furrow, being careful not to break thru the back or north side. Press lightly and remove the foot, then sprinkle in about a dozen seeds. Half of these seeds are dry and half are ready to sprout. Cover with about 1 inch of soil. In this way there are two plantings with one operation on the south side of a little ridge and at an angle if done correctly. Now when the sun shines it is warmer where those seeds are than if they were planted in a flat opening because the rays of the sun strike the earth at almost right angles. Furthermore if heavy rains occur most of the water runs off in the furrow. We have known melons planted in this way to come up perfectly after going thru a two days' heavy rain, while if these same seed had been planted level they would have rotted. We have also seen the ground frozen on the north side of these ridges after seeds were planted without the vitality of the seed being affected.

About 400 lbs. of fertilizers rich in nitrogen, say a 5-8-5 formula, should be used and the seed mixed well with the soil before planting. At the time of thinning the plants, which should be done as soon as natural leaves appear, make an application of nitrate of soda and hoe in, using about 100 lbs. per acre. This is to stimulate vine growth and make the vine vigorous. About the time the plants begin to make runners side dress with a fertilizer analyzing about 2-10-8 using 400 or 500 lbs. per acre and work it well into the soil. This is to furnish the mineral matter the plant will need a little later. At the last cultivation side dress again; using at the time two forms of nitrogen preferably nitrate of soda and ground fish scrap or blood. We prefer to use 2 lbs. of the soda to 3 of the organic material, whether it be fish or blood. In the absence of both fish and blood a high grade tankage will do.

Cultivation should begin as soon as plants are thru the ground and sometimes before; that is, when plants are slow in coming up. It should be continued every week until runners are 3 feet long and fruit set. This last cultivation must be shallow and the side dressing discussed above applied and worked into the soil. A good hand hoeing should follow the horse work at this time and the vine should be handled with care.

There has been a tendency among growers of late years since the Rocky Ford cantaloupe became so popular to plant that strain or variety. This is a mistake. It is not the variety that makes the Rocky Ford melon famous for its flavor, it is environment. As mentioned elsewhere in this article it is perpetual sunshine with control of the water supply. When seeds from the original Rocky Ford locality are planted here in a humid climate they fail sometimes the first season and never later than the second. That has been our own experience and also that of many growers with whom we have conversed. It is far better to stick to the type of melon and varieties that have proven a success in the east or along the Atlantic coast.

Where a large melon is desired the old "Hackensack" or "Long Island Beauty" are among the best. Among the medium sized melons that are desirable are the "Shippers Delight" and various strains of that type of melon. The Fordhook is a very good variety originating in Southern New Jersey. This is one of the salmon fleshed sorts very popular with some people and in some markets. There are other varieties not mentioned, probably just as good.

The accompanying illustration from a photograph taken of a group of hybrid cantaloupes grown on the writer's farm shows quite clearly what has been done and also indicates what can be done with the cantaloupe when the breeder goes to work. This melon is a cross between the Montreal Market and a French variety. The melons shown in the picture are the first generation after the cross. Those in the group to the left resemble the Montreal parent. Those to the right resemble the French parent. Those in centre are true mongrels as they appear and yet a good melon may be bred from some of them. The group to the left are the poorest of the lot. Notice what a large centre or seed cavity they have and how thin the flesh is. Now observe the group at the right with their uniform shape, thick flesh, small seed cavity and we can truly say of equisite flavor.—C. C. Hulsart, Monmouth Co., N. J.

TRELLIS SUPPORT FOR PEAS AND BEANS

We have found after several years of experimenting that all ordinary field and garden peas, except some of the dwarf varieties, bear or produce from one half to double the amount of peas if they are trained while young to some kind of a support made and designed for this particular purpose. As peas untrained usually grow, they will very soon sprawl out in a dense, matted mass, crossing and intervining, until no sunlight or air can freely penetrate the tangled mass. Where these conditions exist no crop of any importance can be grown, as sunlight and free circulation of air in and around vines are two vital necessities in producing crops. When deprived of both sunlight and air, the vines like potatoes, in a dark, warm, cellar will grow an abnormal amount of stems or vines to the exclusion of blooms, consequently we do not get nearly so many peas. These same conditions will also apply to many varieties of pole beans that have a thick, dense growth, and should be guarded against.

While sticks and brush to a certain extent will answer the purpose, we have found this method of support very unhandy and an old out-of-date method of training the vines as compared with some of the later methods. We find the ordinary woven wire 2x2 inch mesh, poultry netting from 36 to 40 inches in width is the best thing we have ever used. Directly over the center of the planted row of peas, this is pulled tightly and fastened to small but rigid stakes driven in the ground along the row, about 3 rods apart. This netting can be fastened to the stakes so that a free space of about 8 or 9 inches intervenes between it and the row directly underneath the netting. The peas soon grow and take hold of this netting. Peas and beans do best if drilled or planted in rows running east and west, as then more or less sunlight strikes both sides of the vines all thru the day. After they have ripened and have been picked, the netting is taken down and as all the vines hang to it, we simply run a small stick or a bar of iron thru the roll, suspend it over a quick blaze, when the vines if in a dry condition as they should be, will quickly burn from it. The heat being of short duration does not spoil the wire. The netting is then rolled up and is clean for next season's use.

This method will be found very convenient where one raises peas and beans on small plots of ground and in the garden for home consumption.—Mrs. H. W. Swope, Montour Co., Pa.

The Effects Of Fertilizers In A Cultivated Orchard.—That "the investigations which have been conducted up to the present time on the problem of maintaining soil fertility in the apple orchard, lead to but one general conclusion, viz: That it may or may not be necessary to use commercial fertilizers," is established by New Hampshire Experiment Station bulletin 168 from Durham, N. H., which makes interesting comparisons.

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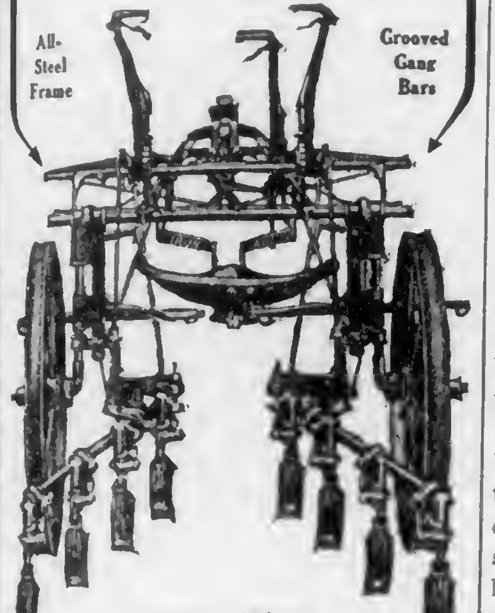

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The Dairy

ROUGHAGE FOR THE DAIRY FARM

The amount of roughage a farmer has in the fall determines the number of animals he can winter. He is an improvident farmer who has to buy large amounts of roughage because one of his objects of keeping cows is to make a home market for his crops. It is only on specialized "Dairy Farms" where breeding is one of the chief aims that it pays to buy hay or other roughage.

The average dairy farm should produce all the roughage and half of the grain consumed by the animals. To do this it is necessary to grow special crops or have the crops arranged in such a rotation that they will give the largest amount of rougaage. There is no one rotation that can be recommended indiscriminately to the dairy farmer of Pennsylvania, for his locality, elevation and soil may not be adapted to growing one or more crops in any rotation that would be given. But notwithstanding this there are several crops which are indispensible to the dairyman, namely corn and clover.

Corn is King in Pennsylvania for there is no locality in the state so cold that if corn is given the right cultural treatment it will not out-yield any other forage crop; and with a silo to put it in, no crop has a higher energy value for feeding. The many uses to which the corn plant can be put commends it to the dairyman as the first and best roughage crop. It can be cut green for soiling, almost mature for silage, mature for grain, and the stover used for feeding or bedding purposes.

Clover is a roughage that supplies large amounts of first class feed rich in protein (an element of great value to the dairyman), and the farm that can not show a clover sod had better look for two things: Poor drainage or acid soil. In many districts of the state more alsike clover is planted than formerly. Why? Alsike clover will stand more acid in the soil and also a wetter soil. Most of our farm land needs one ton of burnt lime or two of stone lime every three or four years, to sweeten the soil and assist in nitrification.

Alfalfa is a better roughage than clover and will grow any place in Pennsylvania that is not too wet or dry to grow other crops and conditions are made right for it. These conditions are well-drained, fertile soil limed, inoculated, made free from weeds, and given good seed.

Oats and peas are also a good roughage. They have the advantage of growing on our lighter soils and the peas, like all legumes, are nitrogen gatherers, having a beneficial effect upon the soil. They are usually sown at the rate of 2 bushels of oats and 1 bushel of Canadian peas per acre.

Soy Beans as a roughage have just began to receive consideration. They, like other legumes, are rich in protein besides their beneficial effect upon the soil. While they do not enter largely into our rotations as a roughage, they certainly have a place on every farm that has a silo. In many instances they are planted with the silage corn and cut with the harvester, or they can be planted in a separate field and cut with a mowing machine; then in filling the silo use two loads of corn to one load of soy beans. As hay they have not been much of a success as they are hard to cure.

In the northern part of the state much rye is planted in the corn at last cultivation, or harrowed in after potatoes. It is cut for hay or grain the following summer. Its feeding value is low and would be much increased if winter vetch were sown with it, using ¾ bushel of rye to 1 bushel of vetch. There are only about 3 days in the life of rye when it is fit to be put in the silo; that is just when the heads show. For that reason rye can not be recommended for that use.

If after haying the farmer thinks he will be short of roughage some ground can be put in millet, cutting before any severe frost. Flat turnips can be sown in the last cultivation of the corn and several tons of good dairy food secured. They must always be fed after milking. A rotation of corn and clover is followed on some farms. In the last cultivation of the corn, clover seed is sown. Then in the spring, when the ground is frozen, drag a plank or iron rail over the field to break off the stubs. This rotation has several advantages. It secures the largest possible yield of roughage and at the same time cultivates the ground often, with the added advantage of having the ground covered at all times with some crop, one of which is a nitrogen gatherer.—L. C. Tompkins, State College, Pa.

AMERICAN JERSEY CATTLE CLUB

The American Jersey Cattle Club has registered the pedigrees of 430,400 animals, about 133,000 of which are now on the farms of the United States. The club has 532 members out of the 12,000 owners of Jersey cattle in this country. Of these members about 100 assembled at the club's headquarters in New York City on May 6, for the annual meeting. E. A. Darling, president of the club reported conditions as most favorable for the Jersey breed and commented on their growing popularity. Registrations increased last year 3,655, transfers 4,777, revenues $9,325. Likewise there was an increase in membership. But to an onlooker it appears that something is hampering the growth in membership. Mr. Sisson, of New York, one of the clearest-headed members of the association, voiced what seems to us to be the policy that should be adopted, namely, to start a campaign for 5,000 new members. "Interest these breeders," said he, "and let us not be too conservative." It would seem that a membership of a little more than 500 out of a total of 12,000 owners of Jerseys, is too meagre. If the club possesses advantages for 500, why not for 5,000?

SOY BEAN GROWTH IN BRADFORD CO., PA.

The report of the committee on fees and revenues was discussed and voted upon. The committee had reported in favor of increasing the fees for registration on males "as too many poor ones are now being registered." Last year's registration shows 8,074 native bulls to 17,233 native cows. It was proposed by the committee to make that fee $5 instead of $1 to members and $2 to non-members. This was approved (to be summitted to mail vote) "in all cases where record of birth had not been filed and in all cases where the animal is over two years old at date of application." But in case the date of birth and other required particulars had been filed the fees were made $1 to members and $2 to non-members. The same fees apply to females. Also in regard to transfers the committee recommended a fee of 50 cents while maintaining the $1 penalty fee to encourage prompt record. This was approved. Duplicate certificates will cost 25 cents each.

A proposed amendment to the effect that fees on importations from the Island of Jersey should be $10 for all animals that had met the required registry of merit tests, and $25 for all others failed to carry. The Board of Directors will investigate conditions with reference to the feasibility of placing a fee on such importations based on the test records made by cows on the Island.

The following proposed amendments to the By-Laws will go to members for mail vote: Permitting the change of names of animals which have not been printed in the Herd Register providing application to make the change has been made to the secretary within a year and a fee of $5 has been paid; concerning the use of numerals in names which must be used in sequence with the dates of birth; refusing to register animals under names that are misleading or profane; requiring that twins be registered at the same time "unless one of the twins is dead and the death has been reported to the club"; empowering the Executive committee to instruct the secretary to register an animal in case of the refusal of the owner of the sire or of the breeder of an animal to sign an application for registration, etc; requiring the seller of an animal to furnish a certificate of transfer on forms provided by the secretary without cost; permitting agricultural colleges and experiment stations to enter herds of Jersey cattle at the same rates as paid by members; providing that animals owned but not bred in Canada may be entered in the A. J. C. C. Herd Register if they were imported from the United States, the Island of Jersey or Great Britain, and animals bred, or both bred and owned in Canada, to be eligible to entry here must be the progeny of animals already entered, or being already entered in the Canadian records, must trace an unbroken line of registration either to ancestry in the A. J. C. C. Herd Register or to animals entered in the Island of Jersey Herd Book; abolishing the requirement that the letters "A. J. C. C." be tattooed in the ear of each imported animal; empowering the Executive committee to appoint a representative to visit any herd for the purpose of inspecting the records kept.

The more important suggested amendments to the Constitution that were approved, were as follows: Providing for the holding of special meetings of the club outside the state of New York; permitting the voting of proxies by members of the club only; requiring that applicant for membership in the club shall be an owner of Jersey cattle, and if "five of the total votes cast (in an election to membership) are negative, the candidate shall not be admitted to membership, except by the unanimous vote of the Board of Directors."

The following officers were chosen for the ensuing year: E. A. Darling, president; H. S. Redfield, vice-president; John P. Hudson, treasurer; B. M. Gow, secretary. At the banquet held at the Manhattan hotel on the evening previous to the annual meeting addresses were delivered by Dr. W. O. Thompson, of Ohio; Dr. L. H. Bailey, of Ithaca, and Prof. F. C. Minkler, or New Jersey.—D.

WHEN GRASS SEEDING FAILS

Recently a number of inquiries have come to me relative to new seeding that did not catch well. It is now rather late to answer these thru the paper in time to do much good for this season, but discussion of such points stay with us best when we have the disappointment on hand. In one case the seeding is so very poor that it is hardly worth while to try to save what is left. Something will grow, but not enough good grasses to make it very good feed. I advised the farmer to plow up the field, fertilize, and sow to oats and peas. This he said he could not do as he was engaged in work that required all his time, and he could not afford to hire it done. The next thing might be to harrow just as soon as it is possible and not cause the soil to lump, sow lightly to oats or barley, using some fertilize, and sow to oats and peas. top, alsike and red clover. The question was asked whether it might not pay to sow on grass seed early without a crop. I have done this just as the frost was coming out of the ground or early just before a rain, and have it do fairly well; but that was where there was a fair stand of plants already present. There were so many that there would have been a fair crop any way. In the case of the farmer mentioned I do not think I would advise the plan.

Another case is of a lot that I'll not make a better showing, but where the field was well manured last season. Here the owner thinks he will harrow and seed with grass but with no crop. I fear that in this case he will get too many weeds, so I advised him to harrow thoroly use the oats and grass seed, and if he feels so disposed, apply 300 lbs. of fertilizer to the acre. I would use a complete fertilizer, but some are getting good results with nothing but acid phosphate. It is possible that where lime has been used the acid phosphate might give better results than where lime has been omitted.

There is one older field that I know where the soil is fair, but where some of the plants have killed out, leaving almost bare spots. My idea is to sow seed and go over with the spike tooth harrow. The field has been top dressed and it is not desired to plow it for a while. I find that a stand of grass can be maintained in good ground for some time by top dressing and seeding early so as to allow the storms and the frost, in some cases, to work the seed into the ground. It is also something of a help to harrow in seed under favorable conditions. All this is for the large class of farmers who desire to keep a long rotation and not plow so much as is commonly advised. For a farm using a short rotation this may as well be disregarded. The short rotation however is not the common practice, but rather the exception.—H. H. Lyon, Chenango Co., N. Y.

NEW YEARLING CHAMPION

Lucky Farce, a Jersey yearling owned and bred by the International Correspondence Schools' Demonstration Farm at Dalton, Pa., recently completed a year's test for production in which she broke the world's yearling record for the Jersey breed. In twelve months Lucky Farce produced 14,260 pounds of milk and 634.45 pounds of butter fat—the equivalent of 745 pounds and 6.7 ounces of butter, estimated on a basis of 85 percent of fat. The test was authenticated by the Pennsylvania State College, for the American Jersey Cattle Club.

The little wonder began her work on March 1, 1913, and finished it for the year on February 28, 1914. When the test began, she was 1 year and 11 months old. She was bred on August 29, 1913—so she carried a calf during six months of her test.

Lucky Farce made an authenticated weekly test of 10.216 pounds of fat—the equivalent of 12.02 pounds of butter—for the last week of her year's test. Her year's record of 14,260 pounds of milk and 746 pounds 6.7 ounces of butter is easily the world's yearling record for the Jersey breed.

LUCKY FARCE, CHAMPION YEARLING.

She is exceeded for milk production under authenticated club test by just one Jersey under 3½ years of age—and this cow's record exceeds Farce's by but 253 pounds 2 ounces. In butter production, Lucky Farce has been excelled by just 3 Jersey cows under 3½ years of age.

Lucky Farce was milked 3 times a day during her test—otherwise she had exactly the same treatment as the other members of the herd. She had no box stall to run in, but was fastened to a stanchion thruout the year. Her feed was a grain mixture consisting chiefly of beet pulp, hominy, gluten, distiller's grains, cottonseed and linseed meals, with alfalfa hay, ensilage, and green peas and oats for roughage. She was not pastured at all during her test.

Lucky Farce is an intensely line-bred Jersey. She is a remarkable exemplification of the law that like breeds like. Her sire and dam are respectively grandson and granddaughter of Golden Rachel's Prince, 60386, the sire of Rachel Cute, 202,500, whose record was 15,162 pounds of milk and 815.2 pounds of butter. She traces 50 times to the great cow Coomassie, premier dam of the Jersey breed; 17 times to Eurotas, a noted dam and the first cow to make a record of over 700 pounds of butter in a year—her year's record being 778 pounds 1 ounce of churned butter; 10 times to Golden Lad, the greatest sire the island of Jersey has ever produced.

BEST FEEDING CROPS

Every dairy farmer should grow as much of his own feed as possible. In our section we can grow nearly all the feeds necessary if we give care to selection, but it is safe to say two-thirds of our farmers buy nearly all of their concentrates. I have found by experience that the following crops do well with us and save much on grain bills.

Corn naturally leads. We always plant enough to fill and refill our silos. If any is left over it is shredded and the stover used as dry feed. The corn is ground on the cob and saves on the feed bill. Canada field peas and oats make a fine combination, when sown at the rate of one bushel of peas to two bushels of oats. We drill in the peas about 4 inches deep, and a week or ten days later we sow the oats about two inches deep.

During the past two years we have used Canada field peas, oats, barley and buckwheat. When these grains are ground and fed in conjunction with silage and clover hay, at the rate of one pound of grain to 3 to 4 pounds of milk produced, there is little need of buying concentrated feeds. Cow peas and soy beans sown together in equal quantities some time in June do fairly well here. We cut this mixture with a grain binder and put one load of the combination with each two loads of corn into the silo. The resulting silage is very good. I am also trying to grow alfalfa but have not succeeded yet. Will try again this year on about 8 or 9 acres.—Joseph Fischler, Tioga Co., Pa.

Testing Milk And Cream For Butter Fat.—Circular No. 42 of the Indiana Experiment Station, mailed free upon request from Lafayette, Ind., has for its purpose the supplying to the milk and cream producers accurate, concise and understandable directions for testing milk and cream in accordance with the most approved and practical methods of using the Babcock test. This circular should be invaluable alike to the large or small dairy operator.

The Storage And Use Of Soil Moisture.—The Nebraska Experiment Station has just issued Bulletin No. 140 on "The Storage And Use Of Soil Moisturo." It treats of the possibilities of storing water in the soil during certain periods by summer tillage, disking, plowing and mulching, these various methods being compared. The bulletin is mailed from Lincoln, Nebraska.

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PROFITABLE SUMMER PASTURE FOR THE PIGS

(Continued from page 1.)

plant for this purpose which can be sown on eastern farms. In the Iowa experiments to which reference is made, rape made a very satisfactory showing in comparison with other pastures. In figuring on the cost of gains made, the cost of growing the forage crops was estimated as accurately as possible. The cost of growing an acre of rape, for instance, was estimated at $9.02 where sown broadcast, which includes $6 per acre for rent of land or $10.35 per acre where sown in drills, with the same allowance for rent of land, the amount of seed sown being five pounds per acre in the one case and 2.5 pounds in the other. With this estimate placed upon the cost of an acre of rape pasture, it was found in an average of four trials that the total cost of 100 pounds of gain in spring pigs pastured on rape and fed a supplementary ration of corn and meat meal was $3.82 per hundred weight with corn at 50 cents per bushel, and $4.41 per hundred weight with corn at 60 cents per bushel. On this basis the average value of an acre of rape pasture for four years was estimated at $81.29, or figured in the price received per bushel of corn, the return for corn fed on rape pasture was 87 cents per bushel with hogs at $6 per cwt.

FINE FORAGE IN DWARF ESSEX RAPE

Oats, Peas and Rape a Good Combination

If it is desired to sow a combination of plants, oats, peas and rape sown at the rate of a bushel of oats, a bushel of peas and three pounds of rape seed per acre will make a good mixture. The average results secured from this combination in the experiments above referred to indicate a cost of $3.92 per hundred pounds of gain with corn at 50 cents per bushel, and $4.51 per hundred pounds of gain with corn at 60 cents per bushel. While this is a somewhat higher cost of gain than for the other pastures mentioned, the per acre value of the pasture was greater, being estimated at $86.56 per acre with corn at 50 cents per bushel and hogs at $6 per cwt., while the average price returned per bushel of corn on this pasture crop was 84.9 cents per bushel.

Cost of Gains without Pasture

Now, to appreciate the advantages of growing pigs on pasture crops, it is not only necessary to have figures with regard to the cost of production under these circumstances, but also the relative cost of pigs fed without pasture under similar conditions. The average cost of gains in two check lots which were fed without pasture in this experiment was $5.17 per hundred pounds of gain with corn at 50 cents per bushel and $5.94 per hundred pounds of gain with corn at 60 cents per bushel. It will thus be seen that while a small profit might result from the production of pork with hogs at $6 per cwt., and corn at 60 cents per bushel under ordinary feeding conditions, that this profit can be increased materially by providing suitable summer pasture crops for the growing pigs, and that the land devoted to this purpose will return, aside from its rental value and the cost of the crop, a handsome profit, which will probably be far greater than the average per acre profit derived from the balance of the farm which is devoted to the regular crop rotation.

The average number of pigs per acre pastured on the different crops in the experiments above mentioned, varied according to the crop used and age of the pigs, from 12 to 30. Experiments were made with various other crops, but the results were best in those above given. It was found, however, that rye was a valuable forage crops for pigs in early spring or late fall and can be used to advantage in connection with other supplementary pasture crops for early and late pasture.

Pasturing of Older Hogs Not So Profitable

It is interesting to note that in this series of experiments it was found that no such economy in gains was secured from the feeding of older hogs on pasture crops, the average economy in gains not being sufficient to pay for the cost of the forage crops in the feeding of fall pigs of the previous year. It may thus be concluded that it will pay a very good profit on the investment to provide a suitable summer pasture crop for the spring pigs, to be supplemented with a suitable grain ration but that the fall pigs which are being fattened should be confined to a more limited pasture range or be fed in a dry lot with a suitable variety of grain feeds supplemented with a little alfalfa or clover hay if available.

The illustrations accompanying this article show the thrifty appearance of pigs pasturing on rape and peas and oats. By a judicious combination of suitable pasture crops and a properly selected grain ration, the pigs can be kept growing thriftily from the start, and will make their owners more money than if such provision is not made for them. The crop used for pasture and the method of growing it should depend upon local conditions. Ordinarily, rape sown broadcast, or peas and oats sown alone or in combination with rape will prove most valuable, or if only a small area is available for a considerable number of hogs, then it will pay to grow rape in drills and cultivate as illustrated herewith. In any event, it will pay to provide a suitable pasture crop for the pigs in a conveniently located hog lot, if they cannot be run on a clover or alfalfa pasture or in fields of clover or alfalfa which will be cut for hay.

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Earth Road Problems

THE POST OFFICE AND GOOD ROAD MAKING

At the present time, when the national government is doing so much to protect the country from the evils that are causing destruction, why can not the people who are advocating good roads also have the help of the federal government? Over $4,000,000 have been spent fighting the brown-tail and gipsy moths. Five millions is the cost of fighting the boll weevil in the cotton belt, and over $2,000,000 have been spent trying to eradicate the cattle tick. This money has been well spent, but it does not reach such a large constituency as the road problem.

The vote of the people of Pennsylvania clearly shows that they do not trust the highway officials and will not put $50,000,000 in their hands to be spent on roads. The Governor of New York is holding up the work of road building in that state until it is proven what is the best and in the long run the most economical road to build. But while we are waiting for the "best road" to be developed, why can we not have now the best road possible under existing circumstances? The Pennsylvania Farmer has consistently advocated the use of the King road drag. Where it has ben intelligently used it has produced good results. But in many parts of Pennsylvania it has not been used at all.

In some parts of the state roads built by the state at great expense have proven most unsatisfactory. One reason has been because the state road has followed an old highway which ran across the hills instead of following a uniform grade by going around them. The load a farmer can take to town is determined by the hardest hill on the haul. When the improved road is made with an asphalt surface, it becomes so difficult for the horses to get hold that there is little or no improvement over a dirt road. In many instances if the dirt road was properly dragged it would be better than the "State road."

Just at this time we are suffering from undragged roads. The state has taken over the roads and in some instances has told the townships to keep "hands off." The state does not drag the road and so it happens that at this time of the year, when the road should be in good condition, it is almost impassible. The rural mail carrier has difficulty in getting over his route, because of mud and holes. The township roads are no better and for the same reason. There is one department of the federal government which has it in its power to give us good country roads the year around except when the frost is coming out of the ground in the spring, and that is the Post Office Department. If the head of the Post Office Department should rule that the rural mail should not be delivered more than once or twice a week except over such routes as are properly dragged, it would have a magical effect on our road question.

The people have become so attached to the rural delivery that if they did not have a daily mail they would soon know why. They would demand that the roads be properly cared for and when this was done they would be surprised that they had ever been satisfied with any other. It would be like the soda makers of England who allowed the muriatic acid which was produced in making soda go up the chimney and escaping into the atmosphere kill all surrounding vegetation. The government compelled them to abate the nuisance and when they passed it into water it became a valuable product for which there was a ready market. In the same way the government could help the farmers improve their condition by withholding the mail until the community showed that they appreciated the government's efforts by providing good roads. Roads are and must always be a community proposition. State laws may regulate, but it is the local community spirit that influences standard of local road work.—W. G. O., Union Co., Pa.

WATER ON OUR EARTH ROADS

To maintain a good dirt road two things are necessary: First, to keep the water off the road in order to maintain the hardness of the ground and, second, to form the road so as to make a smooth track. In olden times the whole stress was laid upon the former proposition. Side drains were shoveled out to carry the water that accumulated, and at short intervals, especially where there was grade, turnoffs or breaks were made to prevent the water from following the wheel tracks. The smoothness of the road was a minor consideration. The dirt was thrown out roughly and unevenly, to be worn down by the teams that used the road. The breaks were made with an almost perpendicular front not because that was a good way to make a track for a vehicle but because it would turn water.

While that plan of dirt road building cannot be defended, it cannot be denied that it did keep the materials for making a good road in place. Any one who has observed the large amount of erosion that has taken place since the adoption of improved road machinery must realize that one of the beauties of riding thru the country is being lost because our roads are getting deeper and deeper very rapidly, so that on the grades, especially, they are often as high as the body of the carriage. It is not hard to see how this state of affairs came about. Years ago when the road scraper first came into general use, it was so easy to cut thru the break, in fact it was hard to keep from doing so, and as a consequence a smoother road was obtained but one that was more subject to the ravages of flood.

It is a well-known law of human thought that in a concert of opinion especially, men's ideas go from one extreme to the other. This general law has not been broken in regard to dirt road making. Once almost the whole attention was given to the control of the water on the road, and the contour of the road got little thought; next thing all the care is centered on the form of the road and the water is allowed to not only destroy the form of the road but also to carry away the very materials out of which the road is made. So far have we gone in this direction that our state legislature has passed a law against these turnouts in the roads.

That brings up the question as to whether this is a proper development in dirt-road economy. We all know that the question of controling the water on our roads is one of the greatest problems in connection with the whole subject. One thing is sure, we do not want to go back to the "thank-you-mams" of the old style of road construction. Neither do we want to continue to be subject to the tremendous expense that follows every large flood and the while to see our highways become gullies in which the out-cropping bed rock makes a condition second only in meanness to a corduroy road. We do not want any sweet potato rows thrown across the road to turn the water out of the wheel tracks, neither do we want to continue the process of filling in trenches down the middle of the track with horses' feet or wagon tires.

There is a sensible middle course in this case as in most others. We simply have to get back to the natural laws that control these matters. In the first place the public highways were never intended to be the water courses of the community. It stands to reason that the public road, always bare, will naturally wear away faster than the fields adjoining, where there is, most of the time, an abundance of roots to prevent its being carried away. It is essential that the water be taken not only off the track but away from the road entirely. Sometimes this water will damage a field but that is no reason why the public should carry it, and if good judgment is used in turning it into the fields there would be little or no damage.

Then on the grades the turn-outs must be maintained; not the old fashioned break with a square front but simply a raise in the surface of the road high enough to cause any water that runs down the wheel track to be turned out into the side drain. Theoretically roads are not to have wheel marks in them, but practically they all do when a continued wet spell makes the surface work up under the wear of traffic. If these turnouts are made with a long inclined plane at each side they will not interefere with any kind of traffic, and they will keep the materials there out of which to make a good road. A King drag even is not much use where everything is washed away but the bed rock and the larger gravel. The legislature would have shown a better understanding of the laws of running water and of erosion if, instead of passing laws against turnouts, they had passed a law compelling supervisors to turn the running water off the roads. Supervisors would be glad of such a law as it would relieve them of the ill will they often get where they do use their judgment and turn the water into a man's field against his will.—John A. McSparran.

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PENNSYLVANIA FARMER

AGRICULTURE THE KEYSTONE OF NATIONAL PROSPERITY

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Philadelphia, Pa., May 23, 1914

Penrose and State College It is not our policy to discuss political issues or candidates except as they affect agricultural conditions or institutions. The publicity given to the activities of the football coach at the Pennsylvania State College in the interest of Senator Penrose in the primary campaign just concluded is directing considerable unjust criticism against the leading agricultural institution in the state. It is a splendid tribute to the efficiency and usefulness of the School of Agriculture in the state institution that the farmers of the state have come to look upon the entire college as their school, their particular branch of the educational equipment of the state. Feeling thus it is quite natural that the farmers should be jealous of the record of the institution and quick to resent any action which may compromise or misrepresent it in any way. The appeal sent by Coach Hollenback to the alumni of the State College to support Senator Penrose in the primary election because of what he has done for that institution met with prompt and vigorous protest. It was not only an insincere appeal for unworthy support, but it carried an insidious reflection upon the position of the institution which the great majority of the loyal alumni were quick to detect and prompt to resent. It must be admitted that any support which Mr. Penrose has accorded State College has been only such as any deserving state institution has a right to expect from its public officials; and if service was rendered for the purpose or with the intention of being capitalized to gain support to gratify his own personal ambitions, as the Hollenback letter would indicate, the sooner the college and all other state institutions are relieved of that kind of support, the better. But the chief concern is in the propriety of an attachee of a state institution using his position for such a purpose. It is extremely unfortunate that the college authorities could not have had the time or found it possible to make it plain at once that they were in no way responsible for the actions of their coach in this matter. In a recent letter to an alumnus, President Sparks says: "Mr. Hollenback is neither in the employ of the college nor under the control of the trustees. During a part of the year he has been employed by a committee of the alumni as football coach. * * * Mr. Hollenback used a published list of the college alumni which is open to anyone and I do not see how we could have prevented the action however much its wisdom was or is questioned." It is to be regretted that this position of the college could not have been made perfectly clear to everyone interested before the election was held. We are glad to give publicity to Dr. Spark's letter at this late date. It is further unfortunate that Mr. Hollenback's sense of loyalty to the institution which thus indirectly employs him was not keen enough to prevent him from taking such advantage of his peculiar connection with it.

Parcel Post Selling One of the first questions to come up to a farmer proposing to sell poultry, eggs or vegetables by parcel post is that of price adjustment. We have had inquiry from readers asking how they can keep posted on the current retail prices on such commodities. There are no regular avenues thru which such quotations can be obtained regularly. But it is doubtful if the retail price can ever be used as a satisfactory basis by which to regulate direct selling prices. In the first place, the retail prices fluctuate too much and are influenced too much by superficial conditions. Again the seller cannot hope to realize full retail prices from products sold in this way. The only hope for any satisfactory system of direct selling is mutual participation in advantages by producer and consumer. If the city purchaser must pay as much for products thus purchased as he would at his retail store or when buying of the dealer who delivers at his door, he will not buy. The price must be gauged to yield a saving to the buyer as well as to the producer; if the system is to succeed. This can be done by making something like an equal division of the margin now existing between the price which the producer receives in selling thru the ordinary channels and the price which the consumer has to pay when buying in the regular markets. This margin is wide enough to yield an attractive profit to both. In arriving at such a division, it would seem that the wholesale price would serve as a much more stable and satisfactory basis than the retail price. Butter fat has long been sold upon the basis of Elgin or New York quotations, and the arrangement has proved satisfactory to all parties. It would seem that a similar arrangement would serve with other commodities.

Contentment of Labor We make a departure from our regular policy in giving space to a lengthy quotation from a contemporary publication in the Farm Crops Department on the second page of this issue. We wish that every farmer might read and catch the spirit of that article. The satisfaction derived from the results of successful effort, as here portrayed, is a part of the compensation of every farmer whose heart is in his work. Many other lines of business offer greater financial returns and attract those whose chief ambition is to accumulate money—to merely shift dollars from the other fellow's pocket into their own. There are not big profits in farming as compared with returns from many other business enterprises, but there is plenty of opportunity for that honest pride and contentment arising from the possession of a dollar made in creative effort rather than $10 made out of a trade and shrewd manipulation. It is the contentment of labor honestly and conscientiously performed and the satisfaction of possession of things actually created, too often ignored or unappreciated, that makes for breadth of character and richness of living in farm folks not found in any other class of people. Contact with the world and its people adds polish, but interested and understanding contact with Nature in rearing the products of the soil gives a conception of the essential things in life and molds character that does not require external polish to give it solid worth.

STATE HORTICULTURAL MEETING

The Summer Meeting of the State Horticultural Association of Pennsylvania will be held at State College, Pa., June 17 and 18. The Association will be the guests of the Department of Horticulture and Experimental Pomology. At that time the experimental plots on the College farms will be in splendid shape and will afford interesting studies to all who are interested in experimental fertilizer work. The cover-crop and fertilizer work in the College Experimental Orchard will at that time show up the growth which each treatment is producing. A trip over the entire plant of the College will be arranged.

Dean Watts, M. G. Kains, Professor Elect of Horticulture, Dr. J. P. Stewart and Professor H. A. Surface of the State Department of Agriculture, and others will speak at the meetings. Routine business of the Association of interest to all members will be transacted at this meeting.

STATE CAPITAL NEWS

Forestry Work.—State forestry authorities are giving practical instruction in the methods of reforestation and care for timber adopted in this State, and also in removing stumps from pasture land. This work is being conducted at the State reserves in counties where people have been asking for instruction. Work in the Juniata valley has been commended by people who have observed the manner in which the state handles its lands.

Slim Road Prospects.—Prospects that about a million dollars paid in by owners of automobiles, etc., will remain tied up all of this year instead of being expended on the state highways are excellent at this writing. A series of lawsuits has been dragging along in the Dauphin county court and some remarkable examples of legal quibbling furnished. The Governor has sharply criticised the course of the auditor general and declared that the blame for the poor condition of roads is due to the man who holds up the funds with which to imporve them. Three mandamus suits have been brought to compel payment. The governor, attorney general and highway commissioner contend that the automobile license act makes it the duty of the auditor general and state treasurer to pay to the highway commissioner money realized from licenses. The auditor general and state treasurer contend that the act clashes with previous laws, but state treasurer is in the more favorable position of the two as he has interposed fewer objections to the carrying of the point at issue to the higher courts. An appeal to the supreme court is certain and a decision is not likely before fall. Meanwhile, the 9,000 miles of main highway go unrepaired. The whole miserable situation is due to the failure of the legislature to be explicit in its work. Perhaps the meeting of the State Board of Agriculture and Institute people at Stroudsburg can suggest some way out of the difficulty.

Traction Engine Rules.—The State Highway Department has decided to let the next legislature wrestle with the problem of regulation of the traction engines. Traction engines which were barred from the roads can now be licensed upon application in which it must be shown that they are being used for agricultural purposes. Just what will happen to the roads will be observed by state road engineers and township supervisors and reported to the legislature. The whole subject is one which should be given earnest consideration and the next general assembly should give the proper consideration to the subject instead of allowing it to drag thru the session.

Fertilizer Surprises.—It is said that the analyses of the samples of fertilizers taken by state agents and now in progress at the agricultural experiment station at State College will show some surprises not down on the cards and that people will get some first-hand information. The greatest handicap has been inability of the state to go to the source of the ingredients. This has been overcome to a certain extent by the work of some of the chemists and the reports will be awaited with interest.

Demonstrations Resumed.—The demonstrations of spraying for codling moth and other orchard pests have been resumed under the personal direction of State Zoologist Surface and his field force. The plan is to run the demonstrations until well into June. The results this year will be made the subject of a series of reports which Dr. Surface will make up on the effect of the treatment on orchards of different varieties and in different soils and sections of the state. Dr. Surface has commenced a card index of all orchards and their yields and the information this year will be added to it.

May Primary Date.—Every change in methods of holding elections, primary as well as general, brings complaint, but there appears to be more reason for the objections to the date of the May primary than ordinary. It appears that in a number of sections the late season has so far retarded farming that many could not spare the time to go to the polling places. The total vote cast is expected to be considerably below the total of enrollment. When the primary law is overhauled, as it will be, next winter, it will be worth while to keep this matter in mind and to pick an earlier date. A primary at this date virtually disfranchises a busy farmer unless he happens to live near the poling place.

Hunters' License Success.—From reports made by officers of the state game commission the operation of the hunters' license law is considered to be a success, altho the revenue derived from the sale of licenses can not be made available until reappropriated by the legislature. Less complaint than was expected was made and comparatively few letters from farmers were received at the office of the commission. Of course, there are some who oppose the law with its system of licenses, but it would appear from letters that by furnishing a means of identification the license law has been a benefit.

State Forestry Work.—State forestry authorities are planning to ask the next legislature for an appropriation to enable them to give practical aid in farm forestry, especially the care of woodlots and woodlands on farms which have long been cultivated. An item of $5,000 was carried in the last general appropriation bill, but went down in the crash. So many calls for advice have been made that a bureau for instruction in tree planting and care in agricultural regions will be advocated. —Hamilton, Harrisburg, May 18.

NEW JERSEY FARM NEWS

Gypsy Moth Menacing.—The report that the gypsy moth has appeared in Westchester County, N. Y., on the border line of New Jersey, has led State Entomologist T. J. Headlee and State Forester Gaskill to redouble their vigilance to prevent the invasion of this state. These two officers are giving special attention to the northeasterly border to see that the moth does not get a foothold in the woods of that section. The state entomologist is doing all he can to enforce the law against bringing infected nursery stock into the state. He is required by law to inspect all incoming plants. If any one has the slightest intimation of the presence of a single gypsy moth, or the eggs of this insect, anywhere in the state, it is his duty to report immediately to the Forester or the Entomologist. There is law enough, and if the proper watchfulness and preventive measures are exercised, New Jersey should not be endangered by the insect.

Cranberry Experiments. — Professor John H. Voorhees, of the State experiment station is engaged at the well-known Buckalew cranberry bogs, making notes of the progress made on the experimental plots. A series of fertilizer tests are being made. The cranberry crop in New Jersey last year was 110,000 barrels or 361,000 bushels, less than half a crop. The average price was $6.25 a barrel, or nearly $700,000 for the entire yield. The American growers have also started a campaign for further introduction of the cranberry in Europe, and during the past year a larger shipment of the berry has been made than ever in its history. This is especially true of the Buckalow berry owing to their peculiar flavor. These bogs have been running continuously for 40 years and for the past six years have been under the management of Mr. Vohmann.

Corn and Tomato Contests.—The corn and tomato contests have extended to nearly all of the 21 counties of New Jersey. Mercer county is taking a leading part. There the contests are conducted by the public schools in co-operation with the farm bureau. Any boy or girl between the ages of 10 and 18 may enter the corn-growing contest, and any girl between the same ages may compete for the prizes in tomato growing and canning. They need not be enrolled in a school. For the winners there are to be diplomas and trips to Washington, and prizes to the value of $50 for others in each class. All who finish the contest and hand in their reports to the county superintendent of schools at the close of the season will be given an excursion to the state farms and experiment stations at New Brunswick, during Farmer's Week, which in itself furnishes a liberal course in agricultural science. Sussex County is also to the fore, and over $200 is offered as prizes, together with an additional prize of $25 to every boy or girl who raises more than 100 bushels of corn to the acre. Girls in their tomato growing and canning contests share equally with boys in the distribution of the $200 prize money.

Forest Fires.—Forest fires and brush fires have been doing considerable damage all over the state this spring. No one has a right, under the state law, to burn brush or trash without first obtaining a permit, and then not in any place that endangers a woods or neighboring buildings. The penalty for violating this law is from $20 to $200. Especial care should be taken at this season to guard against such fires.

Oiled Pools Kill Birds.—Because it is contended that the oiling of pools has resulted in the killing of many nesting birds, some objection is made to this part of the work being done by the Union County Mosquito Extermination Commission. The contention is that the birds go to the oiled pools for drink, causing them to die in large numbers.

Princeton Farm Drops Summer Work. — The Princeton University farm, founded to help needy students by providing work for them, has decided to give up practically all of its summer work. The new $650,000 stadium takes up a large part of the land, and, it was found last year that the market is too limited for large quantities of garden truck. Next fall, new arrangements will be made and work offered all the year round to a limited number of students. This will supplement the agricultural courses in the University.—D. T. Hendrickson.

NEW YORK LETTER

Impeachment Bills.—The natural sequence to the impeachment proceedings of former Governor Sulzer is payment of the costs. According to a report recently made by the attorney-general these costs were over $225,000. Some people are asking the pertinent question, was it worth it?

Barge Canal Vessels.—Announcement is made of the pending incorporation of a company for $3,500,000 to operate a line of electrically-driven freight vessels on the barge canal when it is completed. The proposed line will have a fleet of 30 vessels which will be of two classes, express boats and slower freight boats. The former will make stops at only the larger cities between Albany and Buffalo, altho they will run between New York and the later city. The slower boats will stop at all the cities along the way, about 30 in all. The fast vessels will cover the distance between New York and Buffalo in about three days and the others will make it in about 120 hours. It is announced that the rates will be about 20 percent lower than by rail. The boats will cost $6,500 each.

Onondaga Farm Bureau.—Arrangements have been made by the Onondaga county Farm Bureau for 130 co-operative tests in planting and other phases of agriculture designed to improve agricultural conditions in the county. There will be tests on eight farms in the raising of winter vetch. Experiments will be made on 80 acres, divided among several farms, to determine if the dent varieties of field corn can be profitably grown, and demonstrations of the effectiveness of soy beans as a silo material. In six large orchards the problems of orchard management will be tested out. Raw rock and phosphate tests will be made to determine whether the farmer can get along with phosphoric acid alone, thus effecting economies in comparison with the use of complete fertilizers. This spring 15 cars of alfalfa have been sold thru the Bureau, valued at $4,500.

Cheating the State.—W. A. Mallery, Jr., fiscal supervisor of the state charities, states that over $30,000 a year have been used for the support of persons in no way connected with the charitable institutions of the state, but living on institutional grounds, by the careless interpretation of the law relative to maintenance of employees. At one institution about 100 such persons were found. This custom has been going on for years.

After Tent Caterpillar. — Commissioner Huson has decreed that every farmer who fails to clear his trees of the nests of the tent caterpillar before June 1 will be prosecuted accordingly.

Highway Matters. — The attorney general seeks to recover thousands of dollars from contractors and their bondsmen for violating contracts in highway construction. Under the highway law the contractors are bonded for 50 percent of their contracts and several of these bonds are still held by the state.

The Legislature.—The legislature did not adjourn the week of its coming together as some thought it would. There was too much partisanship injected into the financial legislation and little progress was made outside committees. Probably two or three days more will be required to get things adjusted. If the primary bills or amendments come up, another week is likely to be consumed. The changes of primary day from September 29 to September 23, will be recommended and the change will doubtless be adopted. This is on account of the Jewish voters whose important fast day, atonement day, falls on the former date

COUNTY NOTES

Venango Co., Pa., (N.W.) May 4.—April cold and wet; three frosts in May. Live stock not doing well; no pasture and stock is worrying. Crops not doing well because of cold weather. Apples show for fruit. Eggs, 20c doz; butter, 30c lb; potatoes, $1 bu; hay, $16 ton; straw, $9 ton. Farm work 30 days late. Very few oats sown and not all oat ground plowed. Acreage will be below normal. General conditions much below normal.—W. J. Pringle.

Potter Co., Pa., (N. C.) May 15.—Lots of rain the past week. Cattle are all turned out in pasture now and looking good. Rye and wheat looking good. Not much oats sowed yet on account of wet weather. Farmers are busy plowing and getting soil ready for the seed.—Louis J. Zundel.

Bedford Co., Pa., (S.C.) May 11.—Weather warm, and very wet. Horses and cattle in no demand and prices low. Wheat selling at 90c per bu; oats, 50c bu. Best prospects for fruit crop in many years. Codling-moth spraying about to begin. Spring seeding late, due to very wet weather.—N. F. Richards.

Armstrong Co., Pa., (S.W.) May 10.—Moderate temperature; abundance of rain. Straw, $10 ton; chickens, live, 19c and 20c lb; wheat, $1 to $1.10 bu; oats, 55 to 60c bu; beets, (old) 75c bu; butter, 32c lb; eggs, 20c doz; rhubarb, 5c lb; onions, green, 5c bunch. The majority of farmers have very litle oats sowed because of unfavorable weather. Hired help $1 per day and board.—Arthur R. Allshouse.

Chautauqua Co., N. Y., (S.W.) May 11.—Wet and warm. Live stock in pasture and looking well. Prices high: Cows, $75 to $100; horses, $225 to $300; pigs, $4; shoats to kill, 10½c; veals, 7½ to 8c; chickens, 16c live; eggs, 18c; corn at mill, 82c; oats, 52c; bran, $1.45; shorts, $1.64; meal, $1.53. Farm work backward; very little grain sown on account of weather. Truck looking well except peaches which are practically all killed.—I. L. Barber.

Wayne Co., Pa., (N.E.) May 11.—Clear with frequent showers. Live stock mostly in pasture. The ground has been so wet not many crops have been put in. Prices good on an average. About all farm work done is repair of fences. General conditions of this locality good.—E. W. Carl.

NEW FREE CATALOGS

Valuable Germicide and Horse Liniment.—Mr. H. M. Whitmer, Omaha, Neb., writes: "I bought my first bottle of Absorbine just 20 years ago and I want to say that I have never found anything to equal it when used for a leg brace or to steam a sore horse with." Absorbine has been in use by horse trainers all over the country. Full information is obtainable at any good drug store or may be obtained from W. F. Young, P. D. F. 154 Temple St., Springfield, Mass.

What is a Lightning Rod?—This is an oft-repeated question. The methods used in selling lightning rods some 20 and 25 years ago created a prejudice against rods and discredited them as a protective device which has seriously interefered with their general use. All authorities agree that rods do protect when properly installed. A new booklet issued by Cole Bros. Lightning Rod Co., 328 So. 7th St., St. Louis, Mo., tells what lightning rods are and gives much valuable information on how to install them. It is free upon request.

Blasting Stumps.—The Atlas Powder Company, Wilmington, Del., issues a valuable 64-page book, profusely illustrated, telling how to blast stumps, make holes for tree planting, break up subsoil and otherwise profitably employ explosives on the farm. A postal card request addressed to the company will bring the book free to any of our readers.

Are You Going To Paint?—Every owner of buildings is interested in paint. It protects the property and gives finish in appearance. In buying paint, quality and direct buying are two points of economy. A new booklet called the "Paint Book," issued by O. W. Ingersoll, 249 Plymouth St., Brooklyn, N. Y., describes paint of quality and tells how it may be purchased and save middleman's profit. The book is mailed free from the address given.

Easy Inoculation. — Many farmers have spent time and money on preparation of seed bed for a leguminous crop and for good seed, only to have the crop fail because of lack of inoculation of soil or seed. Knowledge of the need of inoculation for the clovers, alfalfa, peas, beans, vetches, etc., has been dearly purchased, but it has brought out cheaper, easier and improved methods of inoculating. One of the best of these is by use of Farmogerm, advertised on page 5 of this issue. A free book and other literature telling all about Farmogerm and its uses will be sent free upon request to Earp-Thomas Farmogerm Co., Bloomfield, N. J. Ask for Booklet 100.

Mitchell Automobiles.—The Mitchell for 1914 is completely illustrated and described in new catalogs just issued by the Mitchell-Lewis Motor Co., Racine, Wis. These catalogs are certain to be of immense interest to all automobile owners and prospective purchasers. They describe the four and six cylinder models in detail and give the plan of selling with all equipment and accessories. The catalogs are free upon request to the above address if you say you are a reader of Pennsylvania Farmer.

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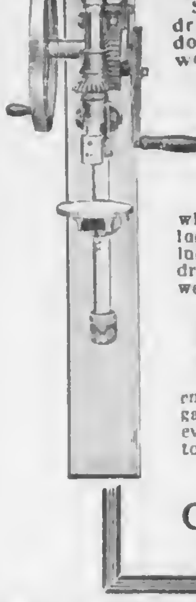

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Frills, Neck Fixings and Edgings.

Ideas From Our New York Correspondent.

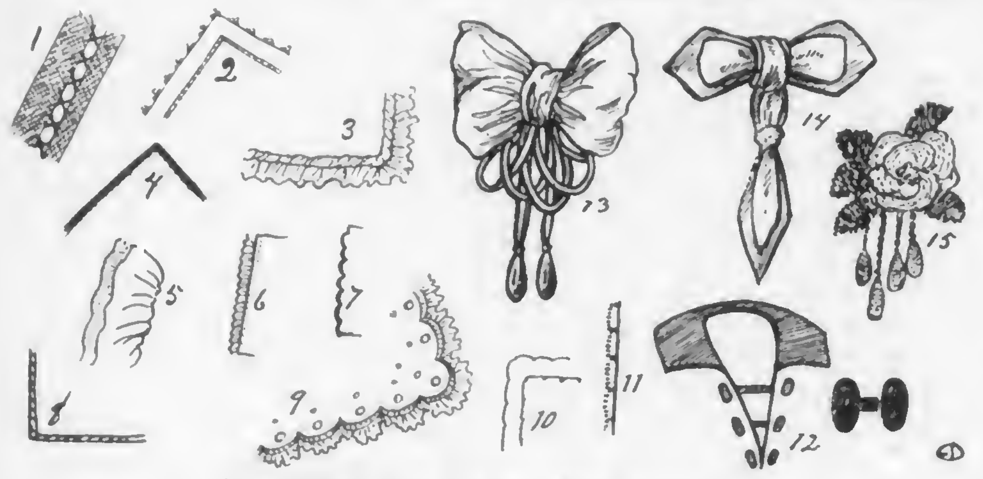
The materials for the summer frills are not expensive and the whole effect of them depends upon their finish. It is the supreme opportunity for the woman who can spend a little hand work on her clothes. Very thin muslin, net or silk is generally used. I have selected the following as the very best of the different ideas for finishing that I have seen this season.

No. 1 shows a method of trimming a cream net waist with black footing in two widths. They are sewed flat to the waist and connected with cross stitches of coarse silk.

No. 2 is a dainty finish for muslin collars and revers. The inside line is crocheted footing, but it could as well be double hem-stitching. The narrow edge was crocheted to the cloth itself in a simple pattern often used to finish Irish crochet edges.

No. 3 trimmed a thin china silk waist. It was a heavy cord, over which the silk had been gathered very tightly. The inch-wide lace frill on the edge could be omitted if desired.

A narrow binding of color was used in No. 4, and tiny buttons, covered with the same color, finished the front of the blouse.



SUGGESTIONS FOR EDGINGS AND FINISHES.

A china silk ruffle, edged with a narrow footing sewed on plain, as shown in No. 5, was very effective instead of revers on a china silk blouse.

A narrow knife plaiting of colored material, as shown in No. 6, is a popular finish for muslin, as is also a fine buttonholed scallop, No. 7, which is sometimes done in color but is most effective in plain white.

Many of the frills or collars are of but one thickness of net or muslin, so they are very often finished with a rolled edge, and oftimes a colored thread is used to confine it, as in No. 8. A hem is too wide at best for the finish of a chiffon or net frill.

One of my favorites among the wide revers and collars, was the one shown in No. 9. The muslin, sometimes even linen, is scalloped, and buttonholed about the edge, then two rows of dots are embroidered inside of them, and the whole is edged with a frill of inch-wide valenciennes.

No. 10 is very aristocratic looking. The flat, soft scallops are really but a line of buttonholed loops, such as we used to make for hooks before flat eyes became popular. These loops are a little longer than the old useful loop, and are always used in a double line, one line occasionally being on the extreme edge of the goods. They are especially pretty on crepe, which they should match in color.

A novel little finish for a low-necked guimp worn with a blue blouse, is shown in No. 11. It is made of blue irridescent beads.

The V-necked middy blouse will be a delight both for mothers and children this summer. My attention has been attracted to some new ones with colored linen collars. Fig. 12 shows a new method of fastening them which is more decorative than the old lacing. Button molds are covered with linen, the color of the collar and sewed to strips of the linen, of graduated lengths. These buttons are slipped thru buttonholes at the side of the blouse opening. The sleeves are slit up a few inches, and provided with the same kind of linked-buttons. And thus it is not so dreadful if you do loose your sleeve buttons!

The V-necked blouses often require something to finish the end of the opening. A large pin, if one has one, is more appropriate here than any other place we have had for it for years, but better still are some pretty silk arrangements like 13, 14 and 15. A knot of soft satin (13) is finished with loops of milliners' folds made of the same material, and the ends terminate in two pendant-shaped beads. No. 14 is made of a combinntion of silk and velvet of the same color, the velvet being used for the upper, smaller loops.

The colored flower (15) is made of leaves crocheted out of silk, and is very expensive, in the stores, but is very easily contrived with some heavy silk and a few hours to spend upon it. —Ellen Den.

WHY I DO MY OWN WORK

At least ninety percent of the women help employed in homes in the large farming area with which I am familiar are negroes. The best workers of this class go to the city, and we have left with us a shiftless, careless set, who as they demand more wages do less work. When I first started housekeeping, a good woman could be employed for $2 per week, and was willing to do anything asked of her. Now the most indifferent careless workers want $2, while those considered good receive $3 to $4 per week, and these women positively refuse to do any work outside the kitchen, except to place the food on the dining table and clear the table.

My experience with help has not in my opinion been unusual. I have had all grades and really have found very little difference. I know women who think themselves experts in managing help, because several years ago they could tell the girl to do and she did. So could I then, but times have changed. Were these women dealing with labor today they could no more get the stairs swept or chicken coops cleaned than I can.

I believe the woman should have some stated work, but we farmers' wives do not want cooks so much as general helpers. I have never yet found a woman who could do everything to suit me, so while I take her place in the kitchen I expect her to sweep, dust or do some other task for me, and this seems a fair arrangement.

This negro help is without education or ideals. Their plane of life, their thoughts and habits are low. So are their pleasures, and I consider the contact they have with my children anything but inspiring to these little minds. My little boy frequently asks questions about things he hears in the kitchen, altho I am very careful about his being around the help.

It is rare that a negro is careful of her own property, and certainly when she does not value her own possessions she will not value mine. We frequently hear a housewife boast of how she does not allow her help to waste anything, because she never gives them an opportunity to steal. I often wonder if she is really sincere in that statement or ignorant of their ways. I never allow help to go to the supplies. I give out each day's allowance, but when I give them sugar to make a dessert I know they may slip out a spoonful or two. I have had them take an egg, a small piece of butter, a little flour, and thus rob the cooking of just a little of each ingredient every day. At the end of the week a nice little supply had accumulated to carry home.

Perhaps the woman is honest, but wastes food by careless cooking—sour bread, or bread not allowed to lighten before baking; food scorched or burned. Also think of the wear on the cooking utensils they try to clean by scraping and digging, for very few will take the safe method of rubbing with ashes or commercial cleaning powder.

Our cooking utensils are mainly of iron, agate or enamel ware. How long will such ware last with repeated burnings, diggings and bangings and droppings. They drop many things thinking that no harm is done so long as the article is not immediately reduced to atoms! They can not see how each dig or blow chips the enamel or bends the ware, producing in times rust and holes, and shortening its term of usefulness.

I once had a woman, considered an extra good one. Her kitchen was always in order, she was neat, but, oh, the struggle I had to have the dark corners of cupboards and pantry kept clean. She would shirk washing some disagreeable pot or pan, and put it in the darkest corner of the cupboard. I have never had one I could fully trust to do honest work. And when their guilt is brought to light, how carefully the case must be handled, that is, if you really want to keep help, for they are very independent.

The nerves are kept constantly strained to manage the help. An unexpected load of company arrives right at dinner time. The result, nine times out of ten, is the "maid of the kitchen" growling and muttering. Ordinarily we are very punctual, but if by some unlooked for accident a meal is delayed, there is the same muttering, frowning and black looks. The physical strain of doing my work is nothing compared with the strain of trying to keep a woman pleased.

Many women object to the long hours on the farm. They are really the healthiest. By rising early much can be accomplished before the debilitating heat of the day, and by proper management one can have time for rest and recreation.

I never have been, nor do I now claim to be a model housekeeper. My house is a home, and I try not to lose sight of my duty to make it and myself attractive to my husband, my children and our friends. I will let some task wait over rather than lose my daily rest. I would rather have cobwebs in my cellar coal bin than in my brain. My ideals are higher than the scrub

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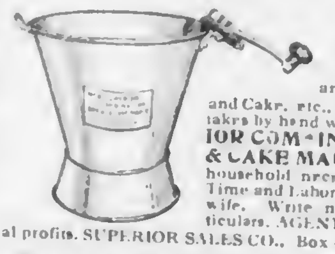
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brush or dust cloth, and I find in my work the reward of service rendered.

I have had in my kitchen some of the foreign white help, but they are not contented with the isolation of the farm. They feel that we are not their own kindred, and there is no companionship for them on the large farms of hundreds of acres. In the city they visit over the back fence or across the alley. At the canneries they come in groups. And I fear it would not be wise to have all our labor of this element for their unions would no doubt cause us trouble when our crops were in perishable condition.

I am not an expert cook, but we all enjoy my cooking more than we do that of any woman we have ever had. I once heard a man say that he never ate any cooking that suited him so well as his wife's, but that he hated to have her tied down to cook for so much help, so they always kept a cook. But I never feel tied down. If I want to go away I can arrange to go and to stay as long as I planned.

But the poor woman who "hates housework and cooking." How I pity her! I am so interested in my home that I have brought myself to "hate" no part of the labor attached to it. Cooking offers such a wide field for brain work. It requires brains to "create something out of nothing." and that situation frequently confronts us in all departments of the work. To cope with the situation tests our ability.—Country Housekeeper, New Castle Co., Del.

LET'S HUNT FOR DANDELIONS.

GOURDS FOR DECORATION AND USE

Gourds belong to the same order of plants as the pumpkin, squash, watermelon, muskmelon and cucumber. The gourds are as tender as any of their relatives and should not be planted until the ground is warm and danger from frost is over. I know of no plant that makes such rampant growth, and few that are so graceful. The beautiful green of the leaves, the gauzy white flowers, and the curious fruits hanging from the vines, scattered over garden fences, add novelty and attractiveness to any place. They must be trained on some support such as arbors, fences, trellis or even a brush heap, and trained so the gourds will hang clear. Some of the large kinds will need supports underneath the fruit, as their weight when nearly mature will be greater than the vine can sustain.

When a young gourd is once scratched the blemish will always remain no matter how small the blemish or the gourd. Advantage is often taken of this peculiarity to do engraving while the shell is yet soft and easily carved. The long-handled dipper gourds may have their handles given any curve or shape desired if trained while young and pliable. Last summer I saw a garden enclosed with a stout wire fence, along three sides of which were growing long-handled dipper gourds. When I saw the garden in September gourds of all sizes were hanging thick along the fence, and the vines were blooming as if they had just commenced business —very ornamental.

With a little ingenuity many ornamental as well as useful things can be made from gourds. Dipper gourds can be used as the name suggests. As bird houses, gourds are very satisfactory; cut a little round hole in the side large enough for the prospective tenant, clean out the inside, bore two or three small holes in the bottom for the escape of water that may collect during rain, nail a twig or stick beneath the hole for the bird to alight on before entering her new home, and your work is done; martins, phoebe birds, bluebirds, wrens and all the "hollow tree haunters" delight in these nests. We have one hanging under the eaves of the kitchen, in which a mother wren has raised one, and sometimes two, broods for five successive summers.

The big round, bulbous-shaped gourds of the sugar-trough variety make nice jardinieres. They are dark brown in color and take a good polish. This is a color that contrasts prettily with the foliage of growing plants. This variety is often used for hanging baskets and will last two or three years. In early times they were used to catch the maple sap in sugar making time. The necks or handles, which are very short, were cut off, and all pith and seeds cleaned out, and the hard woody shell well scraped.

Nest eggs so natural that they deceive old biddy herself are grown with the smaller varieties. Hercules' club, with its pure white blossoms, is very pleasing; if grown properly the "clubs" will be from three to five feet long; the vine grows to a great length with a host of side shoots bearing beautiful foliage and flowers.—Mrs. M. E. S. Charles, Henry Co., Ind.

Soft Ginger Cake.—One-half cup sugar, 1 cup shortening, 1 cup molasses. Stir together and warm on the stove. Add 1 egg, 1 cup sour milk, 1 teaspoonful ginger, and 3 cups flour with I heaping teaspoonful soda sifted in. Beat well, and bake in a moderately hot oven. (Note that this recipe calls for a heaping teaspoonful of soda instead of a level teaspoonful. That is because the molasses is acid, as well as the sour milk, hence more soda than the ½ teaspoonful to the cup of sour milk is needed to neutralize also the acid of the molasses.—The Editor.)

Asparagus Salad.—Take some freshly boiled or canned asparagus, drain it and cut it up into lengths of about one inch, season with olive oil, strained lemon juice, salt, and finely chopped onion. Dish up in a pile on a salad dish, sprinkle all over it some finely chopped chicken, and pour over the whole some mayonnaise sauce.

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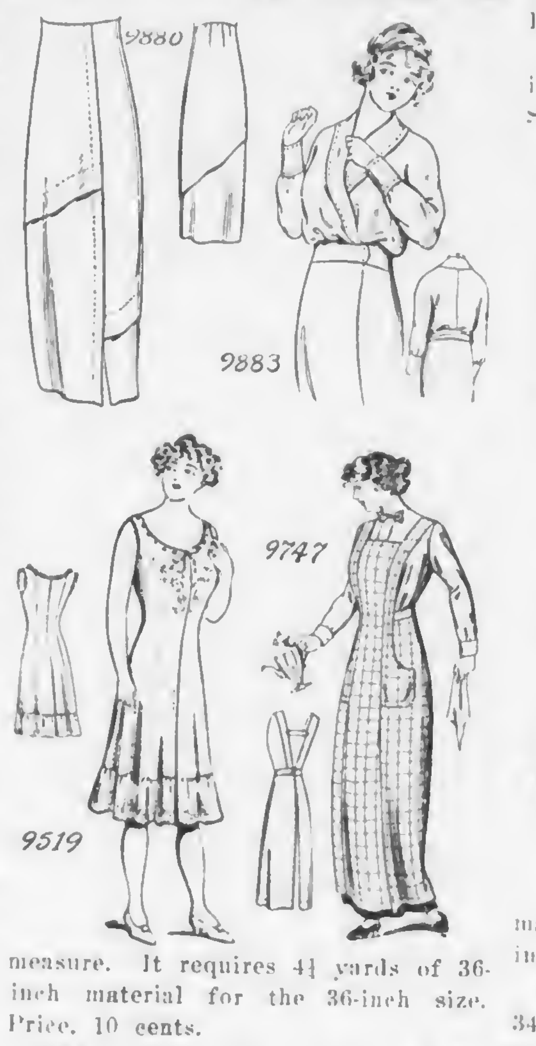

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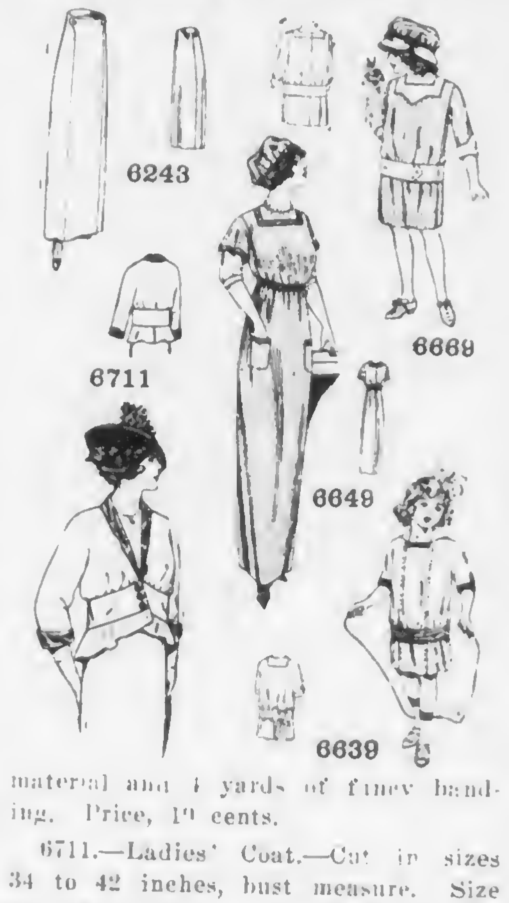

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MR. PRATT

By JOSEPH C. LINCOLN

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SYNOPSIS OF PREVIOUS CHAPTERS

Two New York business men, Van Brunt and Hartley, come to Wellmouth for a vacation. Solomon Pratt, Skipper and village character, finds the "twins," as they are dubbed, interesting but takes them for lunatics and their "man" for their "keeper." The "twins" after harrowing experiences with cooks, ask Pratt to find them a secluded place of rest and act as their cook. The skipper and Hartley have just landed from the "Dora Bassett" on their road to a fair at Eastwich Port witness a greased pig race, and have just seen a red-headed youngster become entangled in a network of horses and wheels in his attempts to obtain the elusive animal.

CHAPTER IV (Concluded)

I was one of the first over that fence, but quick as I was, that Hartley invalid was quicker. As a general thing he moved like 'twas hardly worth while to drag one foot after the other; but now he flew. I could see his big shoulders shoving folks like they was ninepins. Under the ropes he went and in where the tangle was the worst. And then it closed up into a screeching kicking whirlpool like. Down he went and I lost sight of him.

Everybody on the grounds was crazy, but I cal'late I was the worst Bedlamite of the lot. Somehow I felt responsible. 'Twas me that told about the Fourth of July doings first and got him over there. 'Twas me that coaxed him into staying for the consarned pig business. And I kind of felt that I was his guardian, as you might say, now that Van Brunt wa'n't along. Yes, and by ginger, I liked him! Course I thought of the poor little boy, too, but I'm free to say 'twas Hartley that I thought of most.

For the doings of the next two or three minutes you'll have to ask somebody else. All's I remember real well is catching hold of Issachar Tidditt's Sunday cutaway and ripping it from main truck to keelson. You see, Issachar was trying to back out of the tangle and I was diving in. Next thing I'm sure of is hanging onto the bridle of one of the Barry horses and playing snap the whip with my feet, up and down and over and under.

She cleared up some finally and there was a ring of folks jamming and pushing and climbing between wheels and under wagon bodies, and in the middle of the ring was Hartley, kneeling on the ground and looking pretty middling white and sick, with a dripping cut over his eye, and with that little shaver's red head in his lap. And old Doc Bailey was there, but how or when he come I don't know. Yes, me and the pig was there, too, but the critter was out of commission, being dead, and I was too busy to think where I was.

"How is he, doctor?" asked Hartley anxious.

The Doc didn't answer for a minute or so; he was bending over the boy, sponging and swabbing like all possessed. Poor little chap; he looked white and pitiful enough, stretched out there amongst that crowd of strangers and not a soul of his own folks around to look out for him. And he was such a gritty little mite. I looked at him; chalk white he was, and still, with his eyes shut and his breath coming kind of short and jerky. And—well, my breath got jerky, too.

"How is he?" says Hartley again. Just as he said it the boy stirs and begins to breathe more regular. The doctor seemed to feel better.

"He'll come round all right now," says the Doc. "'Twas the kick that knocked him out. The pig got the worst of it and that saved him. There are no bones broken. But he'd have been trampled to death afterwards if it hadn't been for you, sir. Better let me fix up that cut."

But the Twin shook his head kind of impatient. "'Tend to the boy," he says. So the doctor went on with his sponging and swabbing and pretty soon the youngster opens his eyes.

"Did I get him?" says he.

"What's that?" asked the Doc, stooping over.

"Did I get the pig? Is the fiver comin' to me?"

Well, you'd ought to have heard the crowd laugh. Somebody sings out, "Three cheers for the kid," and they give 'em with a whoop.

"What's the matter with youse?" says the youngster, setting up and looking around, dizzy like. "Aw, cut it out!" he says, when they begun to holler some more. "Did I get the pig?"

"You bet you did," says the doctor, laughing. "You're a spunky little rooster. Whose boy are you, anyway? Belong in Eastwich?"

"Naw," says the little feller, like he was plumb disgusted. "N'York."

Hartley smiled. "A brother out east," says he, looking up at me.

Major Phinney had been shoving thru the crowd and now he was in the front rank, where, so they tell me, he used to be in war time—after the fighting was over.

"He's one of the Fresh Air boys," says the Major, puffing, but pompous. "There's a summer school of 'em been started just outside the town here. Couple of New York women brought the tribe down last week. This one's one."

Little red head turned to Hartley. "Say," says he, "don't you tell her."

"Tell who?" says Martin.

"The teacher. Miss Agony."

"Miss which?"

And just then here comes Issachar, his cutaway hanging graceful and ornamental from the collar, and piloting a mighty pretty and stylish young woman to the front. She breaks loose from him and runs for'ard and flops down on her knees.

"Why, Dennis! Why, Dennis!" she says. "How could you run away and behave like this? Are you hurt? Is he—"

She looks up at Hartley as she begins to ask the last question. And he was staring as white as a sheet of paper.

"Why, Agnes!" he says. And she went white, too, and then red. "Oh!" says she. And then "Oh" again. "Oh, Martin!"

CHAPTER V

The Cruise of the "Dora Bassett"

After that there was a kind of tableau, same as them they have at church sociables. Here was Hartley staring at the young woman, and the young woman staring at him, and the boy staring at both of 'em, and me staring at the three, and the crowd around doing grand double-back-action staring at the whole of us. Then the party broke up, as you might say.

Hartley, red as a beet now, got up and bowed. The young woman got up too and held out her hand in a doubting sort of way. But afore he could take it, she seemed to remember something, or changed her mind, for she dropped the hand and turned to the boy, who was on his feet by this time looking down at the relics of his clothes. And between grease and sand and dirt and rags they made a ruin that was worth looking at—made you think of a rubbish pile with a red danger lantern on top.

"You naughty boy!" says she. "How could you do so? If you knew how frightened Miss Talford and I have been. Are you hurt, dear?"

"Naw," says the dear, brisk and disgusted. "Sure I ain't."

The young woman fidgeted around him, petting and "pooring" him and pinning him together, so to speak. Hartley fidgeted too, not seeming to have his bearings at all. He acted to me like he wished he was ten thousand miles away; and yet I cal'late he didn't really wish it neither. The doctor and Major Phinney were fussing around and the crowd kept getting bigger and closing in.

"If you'll excuse me, Miss," says I, interfering as usual where 'twas none of my affairs. "I think perhaps 'twould be a good idea if we went somewheres where 'twan't so popular. Maybe we might go into one of the rooms at the hall or somewheres."

"Why, of course!" says Hartley, grabbing at the notion like 'twas a rope I'd thrown out to him. "We'll go to the hall. Ag—Miss Page, let me present my friend, Mr. Solomon Pratt."

So 'twas the Page girl, after all. I'd guessed as much, tho how she come to be in Eastwich when she'd ought to have been in Europe was more'n I could make out. She looked up at me and reached out her little hand with a kid glove on it. Likewise she smiled—not with her mouth alone, same as an undertaker meeting the relatives of the departed, but with her eyes too. 'Twas the right kind of a smile. I'm vaccinated and not subject to woman folks as a rule, but I'd have done considerable to get a deckload of them smiles.

"I'm very glad to know you, Mr. Pratt," says she, just as tho she meant it. And we shook hands—really shook 'em.

Afore I could get over that shake and smile enough to be sensible, Major Philander shoved her arm into his and headed for the hall. Drat his figurehead! You never could beat that old image when there was a pretty woman around. Hartley looked kind of set back like. Then he takes the boy by the hand and falls into the Major's wake. Me and the doctor trailed along behind.

The Doc kept talking about what a brave thing the Twin's diving under the horses was, but I didn't hear more than half of it. I was watching the Page girl's hat and thinking how much prettier 'twas than the ones them boarder girls at the hotel wore. And yet there wa'n't a quarter so many feathers and ribbons and doodads on it.

The little chap was chirping up to Hartley all the way. What worried him was when he was going to get his five dollars. Martin told him he'd get it all right. He'd advance it himself and collect it afterwards.

"What's your name, son?" says he to the youngster.

"Denny," says the boy.

"Denny? Dennis, you mean? Dennis what?"

"Aw, I don't know. Plain Denny, I guess."

"Where do you live in New York?"

"Over around Cherry Street most of the time. Me and the old man used to hang out in the back room of Mike Donahue's place on Mott Street till he got sent up. Then I got to sellin' papers and doin' shines and things. Sometimes I'd take a shy at the Newboys' Home nights. That's where Miss Agony—Miss Page, I mean—found me. I'm one of the Fresh Air kids over to her place."

"Many more like you over there?"

"Sure! nine or ten of us; girls and all. We been here a week now. I skinned out of the window this mornin' and hoofed it over here. Wanted to see the show. Gee! what a gang of jays! You're the guy what put up the candy for me, ain't you?"

"Shouldn't wonder. Do you like your teacher?"

"Bet your life. She's a peach. So's the other one; Miss Talford her name is."

"Humph! What do they call you over on the East Side when you're at home?"

"Redny," says the little shaver.

Hartley looked down at him and smiled one of his quiet grins.

"Bully for you, Redny!" says he. "You're a brick."

We got thru the crowd and into the hall finally. Shutting the door was a job. The folks outside seemed to think they'd been cheated. I'd like to have got rid of Philander, but you couldn't do that without a block and tackle; he stuck to Miss Page like a kedge anchor to mud bottom. The doctor was putting a strip of sticking plaster on Hartley's forehead. The cut wa'n't nothing but a scratch, I'm glad to say.

After a spell I see my chance and I cornered the Major and commenced to talk politics. He was hankering for the county representative nomination and I knew his soft spot. Hartley and the Page girl got together then, but they didn't seem to know what to say.

I heard her explaining that she hadn't gone to Europe at all. Her ma had been took sick; nothing to speak of, I judge, spell of "nerves" or the like of that. So Agnes and her chum, this Margaret Talford, had seen the chance they'd been waiting for and had got their poor children tribe together and come down and took the Lathrop place at South Eastwich. Seems Miss Talford had hired it afore, intending to go the Fresh Air v'yage alone, long's she couldn't get Agnes to go it with her.

"But how is it that you're here?" says she. "I thought you were at the mountains."

Hartley explained that, at the last moment he had decided to try the seashore. He was at Wellmouth for the present, he said.

"But you should have known I was here," she says. "I wrote to—to Ed, of course—before I left the city. Oh, I see! I sent the letter to your Adirondack address. But it should have been forwarded."

Hartley stammered a little, but he said quiet that he was afraid, perhaps, Van Brunt hadn't thought to send word to have his mail forwarded.

"I see," she says. "That's like Ed."

Martin seemed to think 'twas too, but all he said was, "He's written you very faithfully. His letters, of course, have gone to Liverpool."

Well, that was about all. We had to be going. I said good-by and we started for the door. Miss Page came over and held out her hand.

"Mr. Hartley," says she, "I want to thank you for saving Dennis; Major Phinney told me about it. It was brave. And I'm glad that you're not hurt."

She was pretty nervous, but a good deal less flustered than he was when he took her hand.

(To be continued.)

Markets

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Philadelphia, Pa., May 18, 1914.

The butter market is quiet. Receipts of desirable stock are light and prices show little change. Fresh eggs are moving readily at firm prices. Seasonable vegetables are in liberal supply and moving easily at steady prices. Trade in poultry is slow.

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Poultry.—Fowls, 18@19c; old roosters 12@13c; chickens 27@32c; pigeons, young, 18@22c.

Dressed Poultry.—Western fowls 13@18c; roosters, 14c; squabs $2@4.65 per doz.

Vegetables.—White potatoes, Pa., 85@88c bu., new, $4.00@5.00 bbl; onions, new, $2@2.25 per carrier; peppers $2.25@3.00 per carrier; eggplant, $2.00@3.00 per crate; lettuce, 50@$1 per hamper; homegrown, $1.00@2.00 bbl; beets 3@5c per bunch; sweet potatoes 40@50c per hamper; string beans, $1.00@2.00 per hamper; squash $1.00@1.50 per hamper; cucumbers, $1.50@2.50 per basket; celery 25@40c per bunch; cabbage, new $1.25@1.50 per bbl crate; asparagus, 10@25c per bunch; radishes, hothouse, 25@50c per hamp; carrots, 3@5c per bunch, mushrooms, 20@30c per lb.; peas, $1.00@2.00 per hamper.

Fruits.—Apples $3.00@5.50 per bbl. Pineapples crate $2.00@3.00; lemons $2.50@3.50 per box; grape fruit $1.50@3.00 per box; oranges $2.00@4.50 per box; strawberries, 9@15c per quart.

Hay and Grain.—No. 1 hay, large bales, $19.00@19.50; No. 1 medium $19.00; no grade, $10.00@12.00. Clover mixed hay, light mixed at $17.00@17.50; straw No. 1 straight rye, $17.00; No. 2 do., $15.50@16.00; No. 1 tangled rye straw new $12.50@13; No 2 do. $11.50@12; No 1, wheat straw, $10@10.50; No. 1 oat straw, $10.50@11.00; corn No 2 yellow, 80½ [illegible]; wheat, No. 2 red $1.01@1.01½; No. 1 Northern $1.04½@1.05½; No. 2 white oats 46@46½; No 3 white 44@44½c standard white 45@45½c.

Feed.—The feed market ruled firm under small supplies, but trade was quiet. We quote car lots, including sacks: Winter bran, in 100-pound sacks, per ton, $29.50@30.00; spring bran, in 100-pound sacks, per ton, $28.00@28.50.

Coffee.—Rio 7s 8¾c; Santos 4s 11⅝c. Mild Coffee.—Cordova 12½@16c.

Sugar.—Cut loaf $5.05 cwt; cubes, $4.25; powdered, $4.10; granulated, $4.00; standard granulated, $4.05; crystal A, $4.00.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Hams cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10¾@10⅞c; do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard refined, 11¼@11⅞c tcs; do in tubs 11⅜@12c; do kettle rendered 11¼@11¾c. Tallow, prime city 6⅞c, country, 6⅝c; do. dark, 5⅜c; do. cakes, 6⅞c.

Philadelphia Retail

Vegetables.—Onions 15c ¼-pk Peppers 3 for 10c, eggplants 10@25c apiece; cabbage 5@10c head; lettuce 5@10c; beets new 10c bch. 3 for 25c. Sweet potatoes, 40c ½-pk; white potatoes, new, 20c ¼-pk; string beans 25c ¼-pk; tomatoes 25c per quart; squash 5@10c apiece; cauliflower 25@50c apiece; mushrooms 40c per lb; asparagus 20@40c bunch; cucumbers, 5@10c apiece; celery $1 doz. bunches; radishes 5c bunch; carrots 5c bunch; peas, 50c ½-pk.

Fruit.—Apples 20c per ¼-pk; pineapples 20@25c apiece; grapefruit 2@3 for 25c; oranges 25@50c per dozen; lemons, 15c per dozen strawberries, 25c per quart.

NEW YORK PRODUCE

New York City, May 18, 1914.

Offerings of fresh eggs are in excess of demand and market is weaker on lower grades, which are plentiful. Butter is weak and unsettled with stock in excess of demand. Dressed poultry is strong owing to lighter receipts. Trading in live poultry is very slow at nominal prices. Fruits and vegetables are active on seasonable sorts and prices held firm.

Eggs.—Fresh gathered firsts to extras 21@[illegible]; seconds to thirds, 18½@19¾c; no grades 18@19½c; mixed 21@22c.

Butter.—Creamery firsts to extras 21@26½c; [illegible] firsts to seconds 21@23½c; state dairy [illegible]@25½c; packing stock 15@17½c.

Cheese.—Whole milk specials, 13¾@14c; do common to fancy, 11@13½c; skims 4@11½c.

Dressed Poultry.—Turkeys, dry, 20c lb; broilers [illegible] 45c lb; fowls, 15@19c; old roosters 11½c; ducks spring, 21c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage $1.00@2.00 crate; string beans, $1.00@1.75 bas; carrots $1.50@2.25 [illegible]; cucumbers 40@$1.25 bas; lettuce [illegible]@75c bas; squash 25@75c basket; [illegible] 50@4 standard crt; onions $3.00 [illegible] per 100-lb bag; tomatoes, $1.50@[illegible] carrier; peppers $2.00@3.25 box; beets [illegible]@6.00 per 100 bchs; potatoes, $1.50@[illegible] bbl; sweet potatoes, 65c@$1.10 basket; [illegible] $1@3 box; asparagus, 50c@[illegible] dozen bunches; radishes, 10@25c basket; [illegible] 75c@$1.25 per 100 bunches.

Fruit.—Apples, $2@6 bbl. Grapefruit $1@3.50 per box; oranges, $1.50@4.50 per box; strawberries 8@11c quart.

Grain.—Wheat, No. 2 red $1.06¾. No. 1 Northern $1.01¾; corn, No. 3 yellow 73¼; oats, standard white 45½@46c.

BALTIMORE PRODUCE

Baltimore, Md., May 18, 1914.

Butter.—Creamery, fancy 28@28½c; do choice [illegible]@27c; prints, 28@30c; blocks, 27@[illegible]. Maryland and Penna. rolls 16@18c; process [illegible]@22c.

Eggs.—Near-by firsts, 19c; western, 19c; southern 18c.

Live Poultry.—Hens 17½c; chickens, 20@22c; old roosters 11c; ducks 13c.

Vegetables.—Potatoes, Maryland and Pa., [illegible] new, $1.50@5.00 per bbl; beets, 4@5c bch; beans, green $1.50@1.85 per bas; celery $2.50@2.75 crate; cucumbers, $1.75@2.25 per basket; lettuce 40@90c per basket; tomatoes, $1.25@2.25 carrier; onions 75@90c per 100 bchs; eggplant $2.50@2.75 per crate; cabbage, $1.50@1.75 per crate; asparagus, $1.20@1.50 per dozen bunches; radishes, 25@50c basket; rhubarb, 1@2c bunch.

Fruit.—Apples, $4.00@5.00 bbl. Grapefruit $2.50@4.00 per box. Oranges $2.50@3.00 per box; strawberries, 8@12c per qt.

Grain.—Wheat No. 2 red western $1.02; spot, $1.01; corn, yellow, shelled, 77@77½c oats, standard white, 45½@45¾c; No. 3 white 44½@44¾c; rye 68@73c.

Hay & Straw.—Timothy No. 1, $19@19.50; No. 2 timothy $17.50@18.00; do. No. 3, $15.00@16.50. No. 1, clover $16.50@17.00; No. 2, do., $14.00@15.50; No. 1, tangled rye straw, $12@12.50; No. 1 oat straw $11.00@11.50; No. 1 wheat straw, $8.00@8.50.

Mill Feed.—Spring bran $28@28.50. Middlings, flour to white $29@31; western middlings, $28.50@29.00; city mills, middlings, $28.50@29.00.

WASHINGTON PRODUCE

Washington, D. C., May 18, 1914.

Eggs.—Per dozen, 20c.

Live Poultry.—Hens, per pound, 17@17½c; roosters, 11c; spring chicken 32@33c.

Vegetables.—Potatoes, new $5@5.50 per bbl.; onions $2.25@2.50 crt; lettuce per bas., 50c@$1.25; peppers, $1.50@2.00 per crate eggplant, $1.75@3.00 crate; beets, new, 4@6c per bunch; carrots 3@4c per bch; cabbage $1.50@2.00 bas; cucumbers $1@@1.75 bas; sweet potatoes $1.00@2.00 per bbl; celery, per doz., 60c@$1; tomatoes $1@1.75 crate; asparagus 75c@$2.25 per doz. bchs; peas, $1.00@1.75 basket; lima beans $3.50@4.00 crate; radishes, $3.00@4.00 per 100; rhubarb 2@2½c bunch.

Fruit.—Apples, $4@6.50 per bbl. Pineapples, $2.25@2.75 per crate; grapefruit, $3.00@4.00 per crate; lemons, $2.75@3.00 per box; oranges, $3.00@3.50 per box; strawberries 9@15c per quart.

WILMINGTON PRODUCE

Wilmington, Del., May 18, 1914.

The local markets continue well stocked with seasonable vegetables and fruits. There is little change in prices.

Butter.—Print butter, 35@40c lb. Creamery roll, 40c.

Poultry.—Chickens, dressed, 18@20c; broilers, 25c.

Eggs.—Fresh, 23@24c; storage, 20c.

Vegetables.—Potatoes 10@12c ¼ pk; new 20c ¼-pk; cabbage, new, 4c up; sweet potatoes 10@15c ¼-pk; onions 20@25c ¼-pk; new 20c qt Eggplants 10@15c ea Peppers 20@40c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch Beets new 12c bunch; string beans, 20c ¼-pk; peas, 25c ¼-pk; spinach 10c ¼-pk; asparagus, 35@40c bunch; tomatoes, 15@20c quart; squash, 10c each; kale, 8c ¼-pk; parsnips, 5c bunch; cucumbers, 10@12c each; turnips, 5c ¼-pk; radishes, 5c bunch. Lettuce, 15c lb.

Fruit.—Apples, 15@25c ¼-pk Pineapples 20@25c apiece. Oranges, California 20@30c doz. Florida 35@40c doz. Bananas, 10@15c doz. Grapefruit, 7@10c each; strawberries 40@50c box; lemons 12@15c doz.

YORK PRODUCE MARKET

York, Pa., May 18, 1914.

Eggs have been weak at unchanged prices. Butter slightly better. Many varieties of spring produce, especially flowers are displayed at the various markets. Fine southern strawberries are selling at 18 to 20 cents per box.

Eggs.—19@20c doz.

Butter.—Country, 25@32c; separator, 32@35c. Milk, 5c per quart. Cream, 10@12c per pint.

Poultry.—Hens 14@15c; springers, 22c. Dressed poultry 45c@75c each.

Vegetables. Potatoes 12@16c ½-pk; 85c@$1.00 bu; cabbage 3@8c each; lettuce, 3@5c; beets, 3@5c bch; radishes 5c bunch; onions 2@3c bunch, 15c ½-pk; lima beans, 14@16c qt.; sweet potatoes, 12@15c ½-pk; lard 14@16c lb.; celery 5@10c ea; peppers, 8@12c doz; turnips 10c per ½-pk; soup beans, 10@12c qt; sauer kraut 8c qt; apple butter, 20@25c qt; asparagus, 5@10c bch; rhubarb, 3@5c bch.

Fruit.—Apples, 25@35c ½-pk; strawberries, 17@20c.

Retail Grain Market.—Wheat, $1.04 bu.; corn, 81c; oats, 56c; rye, 77c; bran, $1.60 cwt. middlings, $1.60 cwt.

Wholesale Grain Market.—Wheat, 94c; corn, 74c; oats, 45c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., May 18, 1914.

There has been a slight falling off in the activity of the live stock market altho arrivals are not liberal. Prices are holding about steady. Calves are selling well under light offerings.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,762	9,629	5,071
Previous week	3,112	8,925	4,630

Best steers	$8.85@9.00
Choice steers	8.60@8.75
Good do	8.25@8.50
Medium steers	7.50@8.00
Common steers	7.00@7.25
Bulls	5.00@6.85
Fat cows	5.00@7.00
Medium cows	4.25@4.75
Thin cows	2.75@4.00

Veal calves steady.

Best calves	$10.00@11.00
Good to choice do	9.00@10.00
Medium	8.00@9.00
Common do	6.00@7.00

The sheep market cleans up readily, altho supplies are increasing. Receipts are all of clipped stock. Prices are steady to firm.

Choice wethers	$6.00@6.25
Good do	5.25@5.75
Common to medium	3.50@5.00
Ewes fat	5.00@5.50
Extra lambs	8.25@8.75
Good to choice do	7.50@8.00
Common to medium	5.00@7.00
Early spring lambs, apiece	4.50@6.50

Hogs.—A steady feeling prevailed with holdings under good control. Western, $12.00@12.25.

City Dressed Stock.—Every variety of choice and prime meat commanded steady prices under normal demand. Steers 12@14c; heifers, 10½@13c; cows, 9@11c. Veal calves, 13@14c; country dressed calves 13@14c; extra do, 14½c. Sheep, 11@12c; extra wethers, 13c. Spring lambs 15@16c. Hogs, 12¼@12½c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., May 18, 1914.

Cattle.—With a supply of 100 loads compared with 95 loads the week before our market ruled active and stronger on the lower-priced grades, that is, $7.75@8.10 kinds, while the $8.15@8.50 sold about 10 cents lower and the $8.60 and up were about steady. The class of cattle on sale this week was the best that has been here for quite a while. Fat cows and heifers in light supply and sold steady to strong. Bologna cows sold $4.00@4.25. Bulls in good demand and sold $6.50@7.75. Best fresh cows steady; other grades and springers slow. Today's receipts were 55 loads, and the market ruled active and steady on medium steers but lighter weights sold higher.

Good to choice	$8.85@9.15
Good 1,300-1,400 lb.	8.50@8.75
Medium to good 1,200-1,300 lb	8.10@8.60
Tidy 1,050-1,150 lb.	8.20@8.50
Fair to medium, 900-1,100 lb.	7.50@8.10
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs	5.75@7.00
Common to good fat oxen	4.50@7.00
Common to good fat bulls	5.50@7.85
Common to good fat cows	4.25@7.00
Heifers	5.50@8.00
Bologna cows	3.75@4.25
Fresh cows and springers	25.00@90.00

Calves.—Veal calves active and closed 50c per cwt higher. Today's receipts were 900 head, and the market ruled steady.

Heavy and thin calves	$5.00@7.00
Veal calves	8.00@11.00

Hogs.—The supply during the week has been light and with a good demand market ruled active and higher on all except pigs, which have been a little slow, the close for the week being 20 to 25 cents per cwt. above Monday's prices. Today's supply was 35 double-deck loads, and the market ruled about 5 cents higher than Saturday.

Prime heavy	$8.85@
Heavy mixed	8.90@
Prime medium weights	8.95@
Best heavy Yorkers	8.95@
Light Yorkers	8.95@
Pigs	8.70@8.85
Common to good roughs	7.50@7.90
Stags	6.50@7.00

Sheep and Lambs.—The demand for both sheep and lambs has been good and market ruled higher on choice grades. Sheep closed 15c above Monday's prices, while lambs closed 25 cents higher. Spring lambs in poor demand and closed slow. Today's receipts were 25 double-deck loads, and the market was fairly active at steady prices on choice lambs, but other grades of lambs and sheep were lower. Spring lambs sold steady with last week's close.

Prime wethers	$5.90@6.10
Good mixed	5.75@5.90
Fair mixed ewes and wethers	5.00@5.60
Culls to common	3.00@4.50
Culls to choice lambs	5.50@8.65
Spring lambs	8.00@11.00

BUFFALO LIVE STOCK

Buffalo, N. Y., May 18, 1914.

Cattle.—The general tone of the market was stronger on desirable grades. Medium and mixed butcher steers were in active demand at firm prices. The week closed full steady on butcher grades. Feeders were in good demand by country buyers, selling on the basis of 7@8c. Today's receipts were 4,500 head. Heavy grades sold 15 to 25 cents lower, and butcher stock 10 cents lower.

Choice heavy steers	$9.00@9.15
Fair to good	8.25@8.80
Yearlings	7.75@8.65
Handy butchers	7.25@8.50
Good to choice fat cows	6.50@7.25
Good to choice heifers	7.50@8.15
Butcher bulls	5.00@7.25
Feeders	6.50@8.00
Cows and springers	30.00@90.00

Calves.—Altho the week's opening supply was large, the demand was active and the market 50c higher, sales being at $10.25@10.50. Today's receipts were 1,700 head, and the market was lower.

Choice veals	$10.00@10.50
Lights and thin	6.00@8.75

Sheep and Lambs.—The week opened with a light supply and a good demand from all sides. The basis was 10 cents higher. Yearlings were in light supply and higher. Sheep were in good demand. On the close, the trade was steady on all desirable grades of sheep and lambs. Today's receipts of sheep were 12,000 head, and the market ruled lower.

Choice lambs	$8.50@8.60
Yearlings	7.25@7.75
Wethers	6.25@6.50
Ewes	5.50@8.00
Mixed sheep	5.60@5.75

Hogs.—The week opened with large receipts, an active demand but with prices 10@20c lower. Light weight hogs were in active demand at $8.80@8.90. Medium and heavy grades were easier. Rough and common hogs were easier. Today's receipts were 1,800 head, and the market ruled slow on all grades.

Heavies	$8.85@8.90
Mixed and medium	8.85@8.90
Yorkers	8.85@8.90
Light Yorkers	8.85@8.90
Pigs	8.90@9.00
Roughs	7.50@7.65
Stags	6.50@7.25

Horses.—Receipts for sale, 450. Good demand for choice heavy teams, which were quotable at $700@750; medium pairs, $700; drivers, $125@200.

NEW YORK LIVE STOCK

New York City, May 18, 1914.

Beef Cattle.—Receipts today, 3,000 head. Market steady.

Steers	$8.00@9.25
Bulls	6.00@7.85
Cows	3.50@6.75

Calf receipts 800 head. Market firm.

Choice	$9.00@11.50
Culls	5.50@7.50

Dressed calves higher. Dressed veals 15½@18c.

Sheep and lamb receipts 13,600 head. Market firm.

Sheep	$5.00@6.50
Spring lambs	9.50@10.50

Hog receipts 8,500 head. Market steady.

Choice	$8.90@9.00
Roughs	7.60@7.75

BALTIMORE LIVE STOCK

Baltimore, Md., May 18, 1914.

Cattle.—Receipts for the week were 1,632 head, against 1,161 last week.

Steers	$6.25@8.35
Heifers	5.50@6.75
Cows	3.00@5.75
Bulls	5.25@6.75
Fresh cows	32.50@72.50

Sheep and Lambs.—Receipts for the week were 4,414 head against 3,619 last week. Fair supply; market higher.

Wool sheep	$3.50@6.50
Clipped sheep	2.50@5.75
Wool lambs	7.00@9.75
Clipped lambs	5.50@8.65
Spring lambs	8.00@10.25

Hogs.—Receipts for the week were 9,804 head against 14,521 last week.

Light western	$9.15@9.20
Heavy to medium	9.00@9.25
Near-by	9.00@9.15
Pigs	9.00@9.05
Roughs	7.00@8.00

Calves.—Receipts for the week were 474 head against 375 head last week. Light supply, market steady at $6.50@11.00.

CHICAGO HORSE MARKET

Chicago, Ill., May 18, 1914.

Horses were not in large supply last week and yet they were largely $5@15 per head lower, strictly prime ones excepted, for the latter were comparatively few. Buyers did not want many horses, and sales were likely to drag, with good drafters salable around $225@250 and better ones quoted up to $275@300. Light chunks brought $185@220, with heavier ones taken at $230@250. Pairs of good farm horses brought $300@350, and quite a number of farm mares sold singly around $180@185.—F.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., May 18, 1914.

Receipts of hay continue light. Market fair. The demand is only for the better grades of timothy and light clover mixed. Grades below No. 2 are hard to dispose of at anything like satisfactory prices.

No. 1 timothy	$18.50@19.00
No. 2 timothy	16.00@17.00
No. 1 light mixed	16.50@17.00
No. 1 clover mixed	15.50@16.00
No. 2 clover mixed	12.00@13.00
No. 1 clover	15.50@16.00
No. 2 clover	11.00@12.00

The straw market is a little quiet; receipts and demand are about equal.

No. 1 Oats	$9.75@10.25
No. 2 Oats	9.50@9.75
No. 1 Wheat	9.75@10.00
No. 2 Wheat	9.25@9.50
No. 1 Rye	11.00@11.25
No. 2 Rye	9.75@10.25

Ear Corn.—Ear corn continues urgent for good No. 2 yellow, with very few arrivals. Prices steady.

No. 2 Yellow	83½@84c.
No. 3 Yellow	80@81½c
No. 1 High mixed	82@83c.
No. 2 mixed	80@81c.

Oats.—Oat receipts are a little above the average but an active demand takes care of all arrivals at quotations.

No 2 White	44@44¼c
Standard oats	43¼@43¾c
No. 3 white	42¼@42¾c.
No. 4 white	40¾@41¾c.

NEW YORK HAY MARKET

New York City, May 18, 1914.

The market for hay displays quite a steady tone with a fair demand noticed. Receipts Saturday were 1,111 tons. Prime timothy, $1.15 bale; No 1, $1.10; No. 2 do., $1.00@1.05; No. 3, 85@90c; clover, 60@95c.

The straw market remains steady. Receipts 50 tons. Oat straw, 55@60c; rye straw, 85@90c.

GRASS SEED MARKET

Toledo, O., May 18, 1914.

Clover Seed.—Prime cash, $7.60; October, $7.95.

Timothy.—Prime cash, $2.38½; September, $2.37½.

VISIBLE GRAIN SUPPLY

New York City, May 18, 1914.

Visible supply of grain:

Wheat decreased 4,812,000 bushels; in bond increased 37,000 bushels.

Corn decreased 1,781,000 bushels.

Oats decreased 651,000 bushels; in bond increased 290,000 bushels.

Rye decreased 319,000 bushels.

Barley decreased 376,000 bushels; in bond increased 21,000 bushels.

NEW YORK MILK MARKET

New York City, May 18, 1914.

The dealers blessed the weather at the end of the week because in addition to stimulating production it also stimulated the demand. The flush season is coming on more slowly this year than usual, owing to the superabundance of cool weather.

The receipts of milk and cream in 40-quart cans for the week ending May 16, were as follows:

Railroad	Milk	Cream
Erie	49,817	3,410
Susquehanna	8,766	372
West Shore	16,759	2,132
Lackawanna	58,650	2,775
N. Y. Central (long haul)	85,554	3,086
N. Y. Central (short haul)	12,340	225
Ontario	39,255	5,358
Lehigh Valley	36,480	1,715
Homer Ramsdell Line	2,725	53
New Haven	7,125	210
Pennsylvania	6,476	238
Other sources	1,675	27
Totals	325,622	19,601

ELGIN BUTTER QUOTATION

Elgin, Ill., May 18, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter steady at 25½c.

TOBACCO MARKET

The continued dullness was the main characteristic of the Pennsylvania tobacco market. It is thought that this condition emanates from a series of causes including overproduction, lack of marketing facilities and tariff reduction. However it is estimated that some two-thirds of the crop has been sold, but at prices generally unsatisfactory and unprofitable to growers. The general market, too, was dull and the volume of business small. An encouraging feature is the falling off in importations which are far short of the average.

It is thought that the acreage will be greatly reduced the present year. The prospect for plants is fairly good but continued cool weather favored the work of certain plant-eating insects and also retarded growth.—H. E. Tweed, May 18, 1914.

I SAY THAT The TEMPLE ENGINE is the Most Easily Moved ENGINE made—it actually weighs 1/3 to 1/2 less—has 2/3 less bulk—occupies 1/3 to 1/2 less space—than any horizontal engine of same power capacity. Look at the "Temple" Design and see for yourself that it is true. Made 2 H. P. to 50 H. P., using gasoline, kerosene, alcohol and distillate.

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Veterinary

(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Rheumatism.—One of my hogs appears to be stiff and can hardly move about, besides he seems to have lost his appetite. I have given him wood ashes and salt, but this does not seem to correct the trouble. M. E. T., Herman, Pa.—Give your hog 15 grains ground nux vomica, 20 grains sodium salicylate and 20 grains powdered nitrate of potash, 3 times a day. Give either castor oil or epsom salts to open bowels when necessary. Feed your hog less corn, more pasture, tankage and roots and he will soon show improvement.

Crooked Tail.—I have a mare that carries tail to one side when traveling faster than a walk. I would like to know if anything can be done to make her carry her tail straight. J. E., Selina Grove, Pa.—A surgical operation which is simple and consists in dividing the muscles on the side tail crooks helps. The one set of muscles is usually shorter than opposite and for this reason tail pulls to one side. After the muscles are cut, the tail should be tied to surcingle on opposite side in order to keep ends of muscles apart until granulations are thrown out on the end of divided muscles, which, if accomplished, will lengthen this short set of muscles, obliging horse to carry a straight tail. There is another way to operate which consists of removing a section of long muscles, then pulling tail in a position to allow cut muscles to unite. It usually requires 10 days or two weeks to perfect this work.

Halter Puller.—I have a three-year-old colt that has habit of pulling halter and breaking loose. I find it very unsafe to use this colt on account of this vice. H. W. T., Oil City, Pa.—Usually colts and horses contract the habit of halter pulling by being hitched with frail, easily-broken halters or neck ropes. Therefore, a tricky colt or horse should be hitched to something substantial and a halter or neck strap applied that they cannot break. Tie a rope around body, either back of shoulder or in front of hind legs, passing end thru a neck strap or halter and fasten it securely to a post or manger. In this way he will not attempt to break loose more than a time or two, but be sure and always hitch him securely. There are many other ways that he might be fastened, but those I have suggested are simple and no danger of him hurting himself.

Rough Coated Horses.—Five of my six work horses are shaggy and rough coated. When doing light work they seem to perspire far too much and are growing thin. What can I give them to make them shed their old hair? W. C. K., Meadville, Pa.—Every one of five horses should be clipped. As soon as it is done they will commence to lay on flesh. Mix equal parts ground gentian, ginger, bicarbonate of soda and salt and give each horse a tablespoonful or two at a dose in feed, 2 or 3 times a day. Perhaps you should increase their food supply.

Colts are Lousy.—We have two colts that are troubled with lice, they rub so much that skin is raw in patches. I would like to know what to apply. A. H. N., Troy, Pa.—Killing lice on colts will not rid your horses of lice, but will help. Put 1 oz carbolic acid and 1 oz. glycerine in 3 pints water and apply to lousy colts, twice a week; also spray this same preparation on stall walls. Wet the curry comb and brush and keep after the lice until you are sure they are killed. If colts have long coats you will make headway by first clipping them before treatment is commenced.

Sow Has Mange.—We have a sow that has skin disease which causes her to rub. I am sure it causes an itchiness and sow is growing thin. She had nice litter of pigs, 8 weeks ago, and as they are now weaned I would like to have her cured. T. H. W., Syracuse, N. Y.—Apply 1 part chinosol and 250 parts water daily, or apply 1 part sulphur and 3 parts fresh lard to sore, itchy parts of body, 3 times a week. Give her 20 drops Fowler's solution at a dose in feed, 2 or 3 times a day. Feed grass and keep her in clean pen.

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Hendle Dr F J
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Farm Crop Notes.

Hay-Making

The hay harvest season will soon be on, one of the most strenuous yet delightful seasons of the year. No other business has coupled together so much of prose and poetry as has hay-making. Every real country dweller breathes the poetic spirit at this season even in the midst of hard work. The ring of the scythe, the rattle of the mower, the sweet scented air, the restful peace of the evening after the hay is in cock or barn, turn the long, heated hours into a play-time. I write this knowing full well that sordid natures will sneer at it, but it is not to such I am writing.

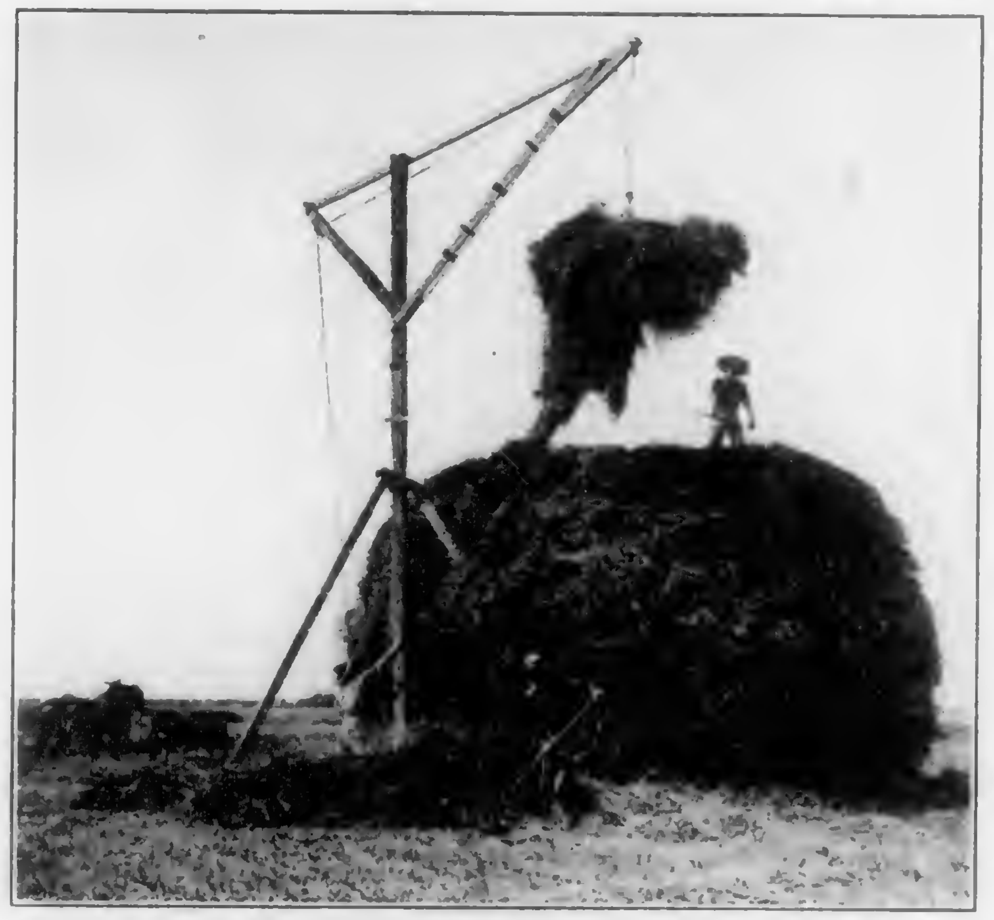
There is no part of farm work that calls for better judgment or a more critical eye on the part of the farmer than hay-making. He must know when the grass has reached the proper stage of development to make the most nutritious hay; he must have a good "weather-eye" so he can read the signs and know when and how much to cut; he needs a calm mind enabling him to "possess his soul in peace" even when pushing the work to the limit without anxiety and killing excitement.

This kind of man does not have spoiled hay from leaching, bleaching and over-ripening. I have known neighbors with equal harvests to have just opposite "luck" in putting up their hay in a showery season; one would get his harvest in in good condition, the other would have much spoiled hay. "Luck" is always on the side of intelligence and good judgment.

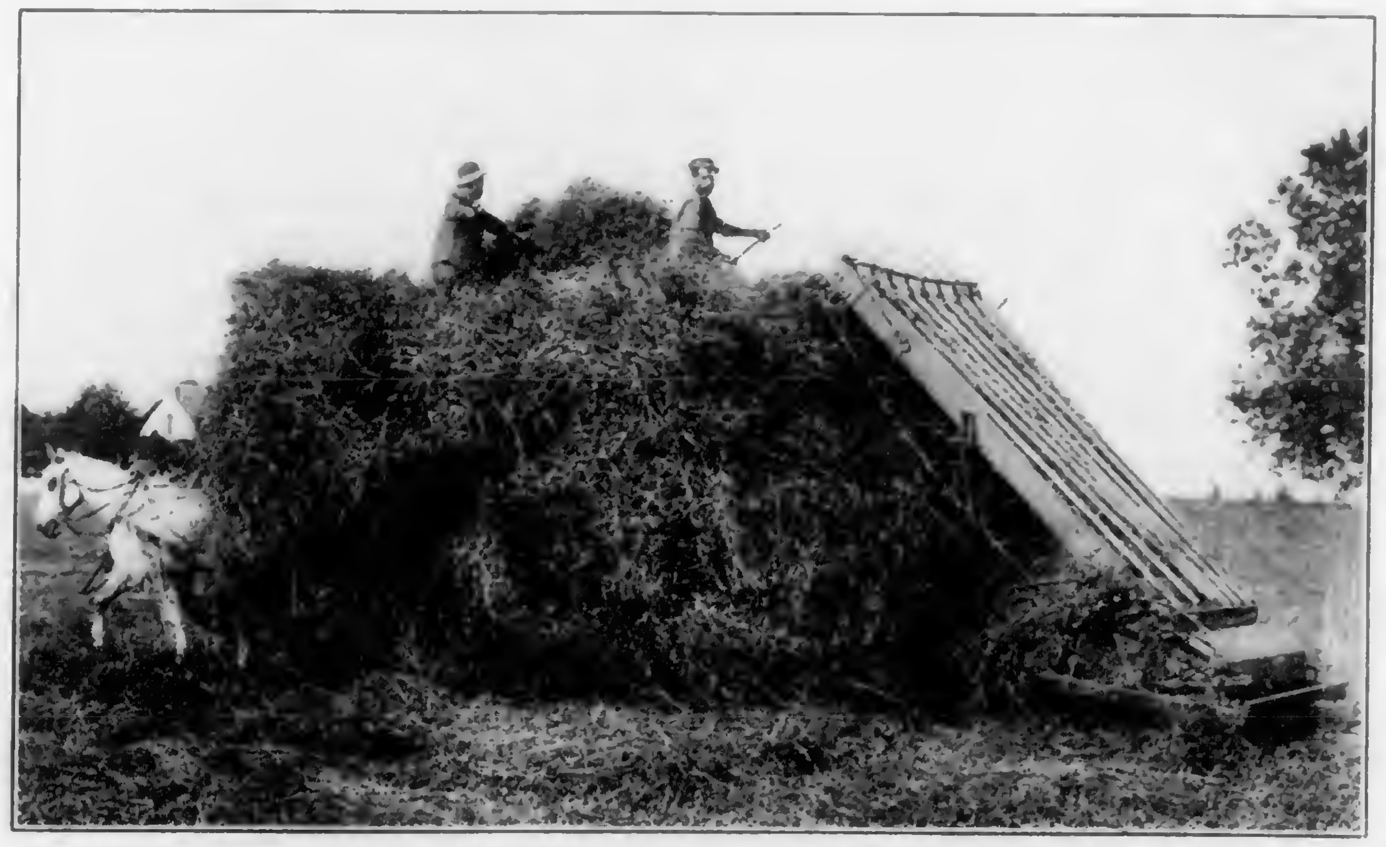
Soil "Stimulants"

The following is one of the rules laid down by a central Pennsylvania bank president for the guidance of contestants in a boys' corn-growing contest, for which the bank is offering premiums: "Any fertilizer which will enrich the soil may be used, but such chemicals or compositions as only stimulate this year's crop and do not enrich the soil may not be used."

Just what the bankers had in mind as stimulants is hard to understand. To stimulate is to arouse to action; hence a stimulant is anything that will bring into use or activity dormant properties. By a liberal interpretation, lime might be considered a stimulant, and it is about the only thing that farmers buy and apply that may be so considered. Surely, the bankers would not discourage the use of lime in moderate quantities.



A STYLE OF DERRICK MUCH USED WHERE HAY HAS TO BE STACKED OR RICKED



THE LOADER SAVES TIME AND MAN LABOR, AND SAVES HAY WHEN A STORM IS COMING.

Nearly all farm lands are liberally supplied with most plant foods but they are often in an insoluble form and hence are valueless to the farmer until made available by some kind of "stimulant." Cultivation, sunshine and stable manure aid in this work and hence may be termed "stimulants." There has been a whole lot of fear and fool talk about nitrate of soda, acid phosphate and potash salts being nothing but stimulants, whereas they are plain elements of plant food in the same sense as milk, soup, eggs, or beef steak are human foods. It is all right for the bankers to "stimulate" interest in better farming, but they should leave the technique to the farmer. The success of the contest will be more certain and lasting. Let the shoemaker stick to his last.

Boys' Contests

We believe in crop-growing contests for boys and girls so long as they are conducted in a sane manner. They arouse interest and beget knowledge. They cause, not only the young people but the parents as well to think and plan for best results, and as long as the prize or the adulation is not the main object, much good may result.

The foolish part of the business in the past has been the "odious comparisons" drawn by the penny-a-liners between the young people and the old folks. It would seem that "Everybody works but father," from some of the reports. It is pointed out that if father did as well as the boy or girl the corn or potato crop of the country would be doubled and the cost of living correspondingly reduced. But, they say, "father will not learn. He is joined to his idols."

It is not mentioned that, usually, father has picked out the best spot of ground on the farm, and that very often it has been his best judgment regarding fertilizers and cultivation that brings results. Of course it is done cheerfully and when the award is given the parents of the successful ones are just as proud and happy as the young folk and are perfectly willing that all the glory shall go to the boy, or girl. But is it fair to the young people, let alone parent? Let's be temperate in eulogizing. Father would do as well on every acre if he could, but he can't.—R. P. Kester.

Convenience of a Hay Tedder.

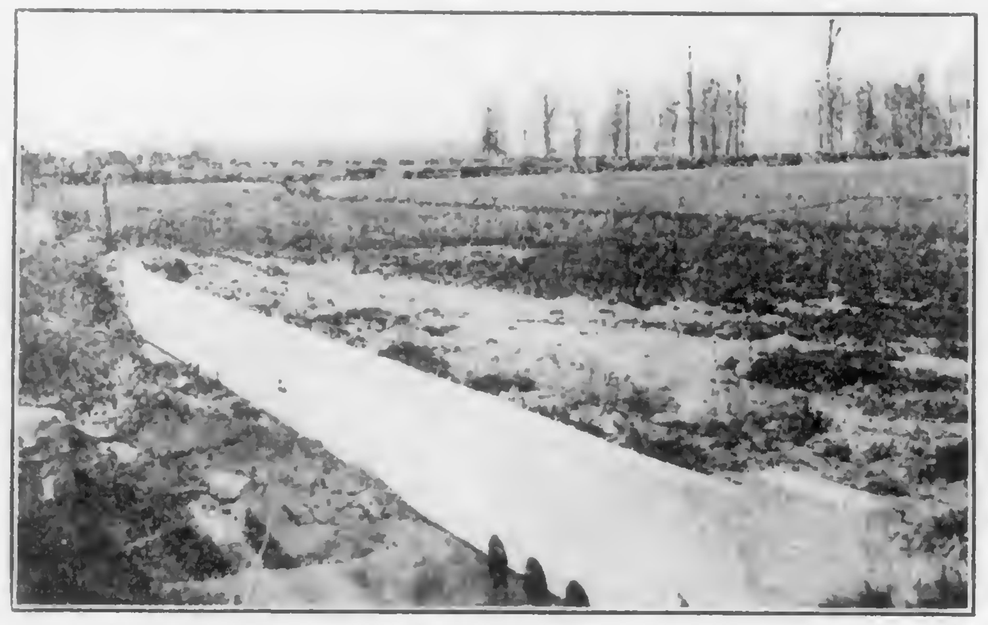
A good hay tedder has a very important place among haying tools. Since applications of lime are making heavy crops of clover, the tedder is especially convenient in properly curing the crop. With the aid of a good tedder it is possible to cut clover in the afternoon or evening, when the dew of the following night will not injure the clover on account of not being cured enough. The following forenoon, by thoroly tedding the hay once or twice, it will not only be evenly cured, but can either be put in shape for drawing in the afternoon or at least for raking into windrows before being wet with the second dew.

In this way very choice clover hay can be put up. Large quantities of clover hay are badly damaged every season by allowing it to lie in the swath for the second dew to blacken, for lack of the service of a tedder in hastening the curing process. Clover hay when allowed to color with a second dew dries very rapidly, and as a rule is not only damaged in being badly colored but becomes over-cured before it can be gotten away. Such hay is unpleasant to handle, and generally comes out of the mow brittle, dirty and dusty.

Choice clover hay should come out of the mow bright and green, and with some elastic feeling to it—not dry as powder. For best results clover hay must be cured as rapidly and evenly as possible and hurried into the barn while there is still enough moisture in it for proper mow curing. Here the use of a good tedder will be found indispensable in gaining this point.

Another advantage gained by the use of a tedder is in making hay during rainy periods. Hay that has been wet by rain can be very quickly dried by tedding once or twice as soon as the weather changes. Even hay wet in the windrow can be shaken up, and quickly dried with a two-horse tedder by driving astride the windrows and going over them a couple of times. I had much rather have hay get wet in the windrow than in the swath, as it colors but very little with once wetting in the windrow.

At times I have even hurried the hay into windrows before being cured when rain was certain, to prevent it being badly colored in the swath; then after the rain "kick up" the windrows with the tedder. In this way a large amount of hay can be shaken up in a short while, and it is surprising how fast such hay will cure after getting wet if the weather is favorable. The hay will not be scattered so much but that a hay loader will pick it up, but if the hay is to be pitched by hand a horse-rake run lengthwise of the windrow will bunch the hay for the pitching in a short while.



CONCRETE ABUTMENT AT TILE DRAIN OPENING.

A tedder should be purchased which will accommodate two full swaths from the mower, no matter if a 5 or 6 foot mower is used; otherwise it makes unpleasant tedding. The tedder should be properly geared to shake up the hay in good order, and the kicker forks arranged with some good spring pattern to withstand the shock from jabbing into uneven ground without breaking and causing annoyance. A tedder should always be equipped with a tongue instead of shafts as it is much more conveniently used with two horses.—C. R. Weidle, Erie Co., Pa.

ACID PHOSPHATES

Upon reading J. H.'s inquiry about fertilizers and A. B.'s reply in recent issues of Pennsylvania Farmer, I took up a West Virginia bulletin on fertilizers and counted 18 different brands of 16-percent guaranteed acid phosphates which showed by the official analysis above the guaranteed analysis. Some of them showed more than 18 percent of available phosphoric acid. The highest analysis of acid phosphate derived from phosphate rock was 18.62 available phosphoric acid. One guaranteed 14 percent South Carolina rock phosphate showed 15.7 percent available acid phosphate. I have repeatedly seen it stated that we can not depend upon a higher percent of plant food than the lowest guarantee mentioned. While this is true, I note that nearly all of the fertilizers sold in our state show a higher percent of plant food than the minimum guarantee.—A. J. Legg, Nicholas Co., W. Va.

RETAINING WALLS AT TILE OUTLETS

Many an otherwise efficient and properly executed system of tile drainage is neglected at its outlet. We have known more than one large county ditch at the outlet of which many tiles had been displaced, shattered by frost, and rooted full of mud by hogs. No system of this kind is complete and in condition for easy maintenance until its outlet is properly safeguarded by some kind of permanent structure designed to keep the tile open, in place, and properly covered at all times. Formerly stone has been used for this purpose with satisfactory results; but now concrete is found better adapted to this kind of work.

At the rear end of our farm we have a system delivering water into a large open ditch that formerly crossed thru our place from end to end. Considerable flood water from two other farms crosses ours and goes into the open ditch at the same point. Another ditch comes down the highway to the same point, making it more difficult to keep an earth mole in place. Formerly a number of hewn logs had been placed in the form of a dam, and re-enforced with earth behind; but floods often displaced the timbers, washed the earth thru the cracks and around the ends, and wrought such havoc that almost every year the hauling of a good deal of dirt was necessary in order to repair the fill so that crops could be planted or harvested in that part of the field immediately adjoining the outlet of the tile. When we first came to the farm a gully had been washed out so far back that quite an area had to be abandoned temporarily until the fill could be repaired, which at that time required several rods of new tile, and four days work of two men and teams.

Last fall we set about it to get a permanent retaining wall built in the dry season. The wall constructed is shown in the photograph. We excavated for the foundation two feet deep and the same in width, (also allowing 6 inches for the front forms) the proposed wall to be 55 feet in length and about 5 feet high from the bottom of the foundation to the top of the wall. In the illustration the wall appears higher than it really is, the tiles passing thru being 12 inch, and the wall being little more than 30 inches above the tops of the tiles. Being anxious to do a permanent job, we possibly constructed a longer wall than is absolutely necessary; however the washing around the end of such a wall would go far towards rendering it useless. From the illustration it may be seen that at each end of the wall it is made 6 inches higher and the earth raised flush with this higher level, which forces the water to pass over the wall instead of allowing it to pass around the ends.

Such a wall should have a base at least two-fifths as thick as the total height of the wall. A 5-foot height should have a 2-foot base. In addition a "toe" should be allowed to project in front and rear to permit of a greater resting surface on the ground. Our wall is two feet thick for the lower two feet, and is sloped on the rear side to an eight-inch face on top. The front forms were constructed in seven foot sections, of best matched barn siding nailed with as few small nails as possible and lowered into the trench when complete; they rested on stakes driven into the bottom of the trench and were held in front at the bottom by stakes and wedges against the earth front. At the tops they were braced strongly from stakes driven six feet in front of the forms.

This form stuff was all cut in 7-foot lengths and when taken out was immediately used in constructing two A-shaped hog cots. In the rear the earth composed the form for the first two feet, and above this old boards were used, except the top board, which was a smooth one. The rear form was spaced from the front by lath passing across above the top of the wall. The rear form may be constructed only as the work progresses; in case front forms are scarce, pull down the first section in two or three days and use it further down the wall. The making and "truing" of the forms on a wall of this length and location is a work requiring considerable care and precision.

We were advised by a competent engineer that re-enforcement for such a gravity wall was unnecessary; as a result of neglecting this we have one small crack about the middle of the wall (the part where the tiles pass thru having been re-enforced). Wherever the bottom of the trench is damp, crushed or small stones should be thoro ly tamped in to render the foundation more firm. The crack in this wall is a settlement crack due to insufficient attention to the tamping. Such walls may well be constructed in sections of 20 to 25 feet to prevent contraction cracks, as joints are more sightly. We used a 1:2:5 mixture; that is, we used a 1:5 of bank gravel. The cement was mixed in a flat sled made for the purpose and drawn by a horse along the trench, and thrown with scoopshovels immediately in place. We mixed sloppy, and prefer that way. Keep a lath for running back and forth over the front face so as to keep the pebbles back and give a fine front surface.

Such a wall will cost, including all material, forms, labor,—in fact everything—about $2 per foot of length; lower walls cost much less, being correspondingly less thick. We expect to find it necessary, or at least advisable, to provide a riprap of field stones in front of this wall to keep the falling water from undermining the wall.—Geo. P. Williams, Delaware Co., O.

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Poultry

CARE OF BROOD DURING WET WEATHER

A little neglect during a rainy period may result in the loss of whole broods of chicks. We like to keep chicks growing rapidly and this is easy to do in favorable weather; but when a prolonged rainy spell strikes us we are satisfied if we can only keep the chicks alive and healthy.

Cleanliness and dryness in brood coops are important factors and so difficult to secure during a prolonged rainy period. The hens with small broods will go thru a wet spell with less attention than the ones with big families.

Turning broods loose in the wet lowers vitality and invites gapes, so we must keep the chicks confined to coops and brooders much of the time. We find the hens are less restless and hover their chicks better when given a little outing once a day, no matter how bad the weather is. We give the hens and chicks their liberty a little while in the evening. They won't go far enough to hurt the chicks at this time and while they are out we have a good chance to give the coops the daily cleaning they must have in wet weather. A covering of dry chaff makes the floor dry and warm for the little chilled feet on a cool rainy night.

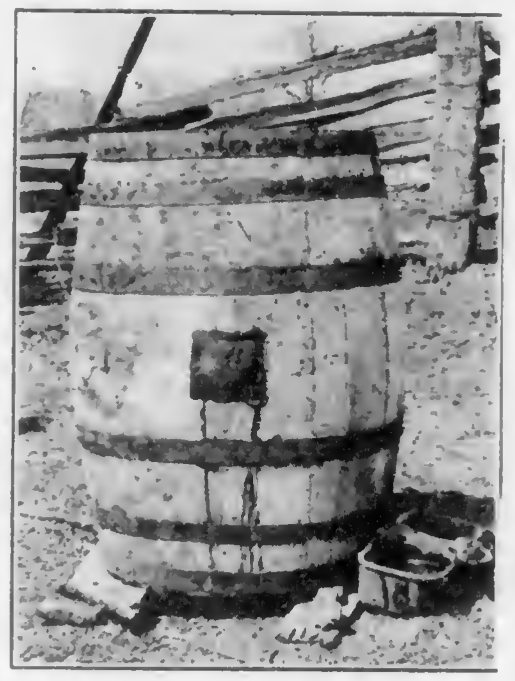
One spring when we had over a week of cool rainy weather the last of May we moved several hens with large broods to the barn. We kept hens in coops and let the chicks out on the barn floor where they had a merry time in the dry. When the weather cleared up we moved the whole outfit back to the poultry yard. This was some trouble but we got the chicks all thru the wet weather safely and others did not fare so well, altho we gave them every attention. We find a box stall in the barn is a splendid place to keep an old turkey hen and her young during a wet period. An outdoor brooder is all right out in the open when the weather is nice, but in bad weather it is so much easier for the caretaker and better for the chicks to have the brooder located where wind and rain cannot strike it.

It takes courage on the part of the farmer's wife to wade thru the wet after the chickens, sometimes going right out in a shower. We need short skirts for this work, water proof shoes and a wrap always handy. Our own health is worth more than the chicken crop. Keeping the grass short about the coops makes it better for the one who cares for the chicks and healthier besides for the chicks.—Fannie M. Wood, Wayne County, Ind.

WHEN TO PUT SUPERS ON THE HIVES

There is no subject of more importance to the bee-keeper, nor is there one that gives him more pleasure than the study of the honey-producing flora of his locality. No matter whether they bloom in the garden, the field or forest, or perchance along the roadside; if bees gather nectar from them they at once become an object of interest and investigation. The question of bee forage is one that every one engaged in bee-keeping should investigate, for upon the amount and duration of the honey-producing plants and trees in the vicinity of the apiary depends the success or failure of the enterprise. The results depend quite a good deal upon the skill and management of the bee-keeper. A good deal of work must be done if the best results are to be gained. First, the colony to do the work should be strong in bees, and I think, the stronger the better; if not so naturally, it should be made so by feeding, or by supplying bees from some other colony. Many talk about the swarming impulse, but I prefer the business impulse, and if there is not honey enough coming in to make this impulse, you must secure it by means of feed.

The time to put on supers, whether for extracting or for comb honey, is just before the beginning of the real harvest, or at its very inception. When the harvest is about to begin, or is beginning, the least delay is injurious, as the possible lack of room may cause preparations for swarming on the part of the strongest colonies, and it must be borne in mind that these colonies are the ones upon which we should depend for the best of the crop. The first signs of a beginning of the crop are detected by the whitening of the combs by the bees. The harvesting of a little honey prompts them to repair the combs that have been cut down by the unsealing of the cells that contained the previous crop, and they hasten to repair these and add fresh wax to them, just as soon as they feel that there is enough surplus produced to justify them in using a part of it in that way. Even the blackest and oldest combs are usually refreshened, and at the first signs of this evident encouragement one should lose no time in putting supers on all hives that show it. The fresh honey itself might be detected even a day or two sooner if the combs are lifted out, for it drips out just like water, being thin and unripe.



POULTRY-WATERING DEVICE.

Putting on sections early seems to keep the swarming fever down more than anything else we ever tried. Put them on as soon as it can be done without chilling the brood and retarding brood-rearing. One year, in our early experience, we put on the supers, but gave only a few sections in each super, intending to put them on as soon as was needed; but the bees became crowded suddenly, and swarming was fearful. They swarmed over and over again giving us no time to get supers filled with so many swarms to care for. So we have learned also to have supers all filled, for a super can as easily be put on as only a one pound section. Bait combs are of such importance in a weak flow, and with the weaker colonies, that I would use them even if the honey had to be extracted, the combs being dark or otherwise off-grade.

I have found it desirable to use drawn comb and full sheets of foundation in the same super, as the bees will fill and complete the sections containing comb before commencing work on the foundation. The first supers we select with one section of drawn comb in each corner, the rest of the sections being filled with full sheets of foundation. These combs at the corners start the bees to work the corners first and that means that they will work the sections altogether, thus causing all the sections to be sealed at nearly the same time. The usual way of putting one bait-comb in the center causes this part of the super to be finished, sealed, and, perhaps, travel-stained, before the outside sections are sealed, and ready to come off. With our super arranged with drawn combs in the corners, and full sheets of foundation in the balance of the sections they are all finished at the same time, before there is a particle of travel stain, thus doing away with the only objection there is to leaving the super on until all the sections are finished.

When nectar is abundant in the fields, and your bees hesitate about starting work in the sections but crowd the brood nest with it, try the following plan. When the combs are sealed at the top in the broood chambers, mash these cells at the top of the brood frames with a table fork; shut up the hive, put the sections on, and then rap on the hive. Do this just before dusk, and you will find the bees nicely at work there the next morning. Of course, it must be during the honey flow. It is not difficult to persuade any colony of bees, of proper strength, to work in the section, but do it by rapping on the hive and driving them up. They fill themselves with honey and go up there and work. You have perhaps sacrificed enough cells so that they will have no cells except those to put honey in. The honey will have to be taken out by the bees. It is a forcing process, but it secures the result.—F. G. Herman, Bergen Co., N. J.

POULTRY WATERING DEVICE

The photograph is taken from one of the automatic water fountains used in supplying the colonies with water when the birds are out on the range. These automatic fountains are purchased of a mail order house, and attached to large barrels. We use tar barrels for this purpose. We can get these barrels at our hardware dealers at 25 cents each. One head is removed and the barrels cleaned by burning out the tar and scraping off the remaining charcoal. A burlap sack is nailed over the top to keep out foreign matter and strain the water, so nothing gets under the valve and prevents its working. We fill the barrels as frequently as required, hauling the water out on a stone boat.—J. T. Campbell, Crawford Co., Pa.

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A Neglected Asset---The Farm Orchard

By W. MILTON KELLY, Erie County, N. Y.

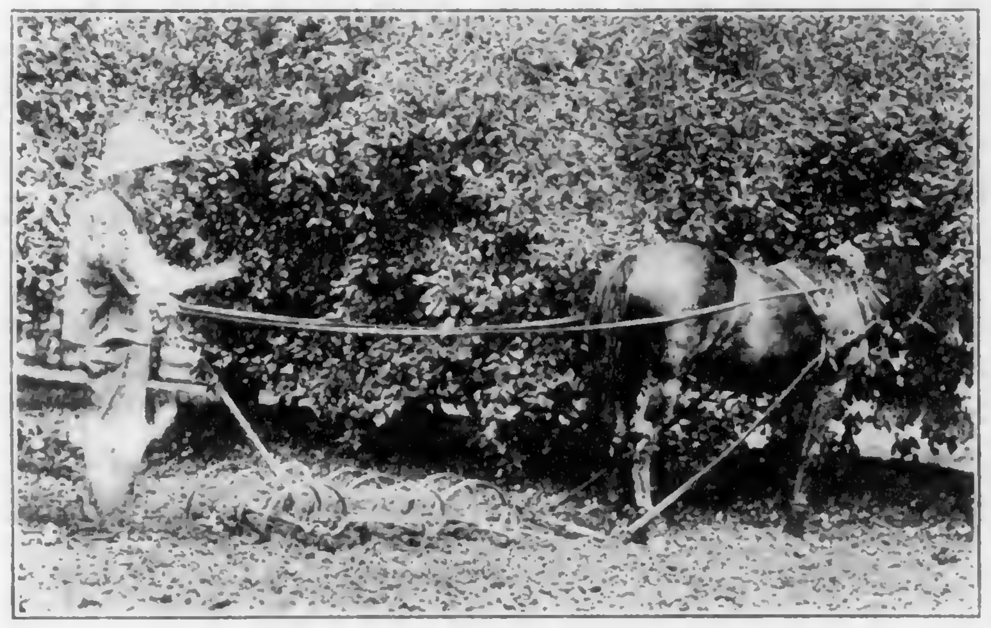
One of the first problems the purchaser of an eastern farm has to face is that of renovating an old orchard. The question of the profitableness of the undertaking is not always of first consideration, for every farm should have enough fruit trees to provide an abundance of fruit for home use. If the trees are old and infested with insects and diseases there is, of course, no use in attempting to bring them to life again. If they are partially sound and have only suffered thru neglect and uncongenial soil conditions it is comparatively easy to shape a course of management that will restore them to a healthy, productive condition within a few years. On the other hand, if the trees are mostly dead, if there are large limbs broken down and split, and if there are large decayed cavities in the trunks the cost of getting them into condition will vastly exceed the value of the few crops of fruit that they will produce.

From a commercial point of view the trees should be fairly uniform and complete. If only a few of the trees remain, it may be considered a very doubtful expediency to invest the labor and plant food necessary to put them in shape to produce crops of fruit. If the land is cheap, or situated so that it may be utilized conveniently for poultry, sheep or hog runs, it may be profitable to bring the few remaining trees back to life and depend upon the twofold use of the land for a few years until young trees can be started on other parts of the farm. On one of the writer's farms an old orchard that had been neglected by the former owner was restored to a productive condition by giving the trees a thoro pruning and scraping during the winter and spring and utilizing it as night pasture for dairy cattle. After seeding with clover and timothy this six acre orchard afforded considerable grazing and the droppings from the cattle helped to supply the plant food needed by the trees. The varieties were Greenings, Baldwins and Northern Spies. For several years these trees have produced a net profit of more than $100. altho more than one-half of the original planting were missing and others in a serious stage of neglect.

In order to make the work profitable the trees must be of standard varieties. One can not afford to invest labor and lose the use of the land in attempting to restore trees that will produce nothing but worthless fruit after they have been renovated. Of course, healthy trees may be top-worked to desirable varieties, but at the same time this is hard work and presents many risks and difficulties, so that the orchard must be in pretty good condition in other ways in order to make the work profitable from a commercial point of view. Trees situated near the buildings and in out of the way places about the farm should be grafted to varieties suitable for family uses.

Before starting any systematic plan of renovating an old orchard one should make a careful examination of the trees and determine to what extent they have been attacked by insects and disease. Among the important enemies of the orchard are San Jose scale, oyster-shell louse and apple-tree canker. All of these can be held in control, but to get rid of them requires considerable labor and expense. It is, therefore, better not to undertake the work unless one is thoroly convinced that it will ultimately return fair profits.

The first step toward accomplishing the desired results consists in giving the trees a thoro pruning. The first work should consist of removing the larger broken limbs along the wood that is diseased and actually dead. After the work is completed and the trees have regained their normal condition all interfering branches and those that render the tree unsymmetrical may be removed. In remodeling old trees special pains should be taken to shorten the heads. In order to keep the bearing surface within range of the spraying machine, heading-in is often desirable. This part of the work should be accomplished with care, and unless one has a knowledge of the principles which underlie the work he had better employ an expert to assist him. Better results will usually follow if the work is distributed so that the trees will be brought to the desired shape and condition in two or three years. In some instances the desired results have been accomplished in a single year, but it is my opinion that the safer course to pursue is to give the trees time to gradually regain their normal condition by the time the last work is performed.



USING THE HARROW IN ORCHARD CULTIVATION.

After the first pruning the trunk and main branches should be thoroly scraped. This work can be performed efficiently with an old hoe, or with a special scraper, which can be bought for about twenty-five cents. Removing the old broken bark and burning it promptly does away with a large number of fungus spores; besides it is a favorite lodging place for all kinds of orchard pests. In this way we not only destroy the pests, but their hiding places are obliterated also at the one operation.

Decayed cavities in the trunks and on the large limbs are caused by mechanical injuries, by careless pruning, or by failure to protect the wounds after pruning. If the orchard has been properly cared for there will be but few cavities to fill. If, however, the orchard has suffered neglect the lives of the remaining trees may be prolonged for years if their cavities are cleaned and filled. This work consists of cleaning out the decayed matter, thoroly sterilizing the cavity with a solution of copper sulphate at the rate of one pound to fifteen gallons of water, filling with cement, and leaving the surface in such a condition that the bark will readily heal over the edge of the cement. Care should be taken to level off the cement so that the bark will heal over the edge of the wound, sealing up the cavity as closely as possible.

If the trees are to be top-worked with new varieties this work should be started early in the spring after the first pruning so that it may be distributed along with the pruning during the two or three years. As the grafting will require the removal of a certain number of branches it should be done before all of the pruning is performed in order that one may intelligently select the best positions for the grafts.

The best all-round treatment for San Jose scale and oyster-shell louse consists of spraying the trees early during the first spring with a thoro application of the lime-sulphur wash applied in as warm a state as possible. Canker may then be taken care of more effectively by the spring applications of Bordeaux mixture. In the control of scale, thoroness is the important thing, and it is necessary to leave a film of the spray mixture over the entire surface of the bark, especially at the ends of the branches. Severe pruning facilitates spraying, and the work is extremely simple where the trees have been severely cut back.

In the management of the soil the first step toward renovating an old orchard consists of plowing the ground and getting it into condition to grow cover and fertilizing crops. The usual way of plowing around fruit trees is more injurious than not plowing at all for it is ruinous to the growth of the trees and cuts off nearly all of the important roots. These roots that grow close to the surface of the soil are the great absorbents of nourishment, whether they are roots of trees, plants or shrubs that yield fruit. This is a habit common to plants and trees to throw out a system of roots near the surface of the soil, where they will take up and readily appropriate the fertilizing elements with which they come in contact, to the purpose of developing the stems, or fruit of the growing plant.

If we will examine the surface soil around any tree where the ground has not been plowed or disturbed for a few years, we will find that a system of roots has been formed close to the surface of the soil. If these roots are all cut off another set will be formed in their place in a few years, or if the soil is worked up to the trees and left there a set of roots will start out about so far from the surface; then if more dirt is worked around the tree another set of surface roots will start out except in the case of extremely old trees. We have worked soil up around grape vines and in one year a new set of surface roots have formed that would measure more than two feet long.

Some trees that are set too deep will not thrive for a few years, or until they have put out another set of feeding roots, yet as soon as a new system of roots is formed they will make a very rapid growth and produce an abundance of fruit. These facts are sufficient to prove that roots close to the surface are essential to the growth of trees and plants, or nature would not be so prompt to reproduce a new set as soon as one set is injured. This system of surface roots is not confined alone to trees, but wheat, corn and other grains if the seed is buried deep, will immediately send out a system of surface roots, and if the soil be piled around the stems before the blossoms appear, another set of surface roots will be sent out just below the surface of the soil.

From these facts we can see at once that if we plow an old orchard we must plow very shallow for a number of feet away from the tree row. With a plow properly set and a good, steady team, it is not a difficult piece of work to plow an orchard and when up to within a few feet of the tree row the plow should be adjusted so that it will cut off not more than two or three inches of the surface soil and not disturb the roots. When an orchard is plowed every year or two from the time it is set out the surface roots will be kept down to a depth where they will not be injured by the plow.

After the orchard has been plowed, the next problem is that of growing fertilizing and cover crops. This work must be governed largely by the condition of the trees and the amount of available plant food in the soil. As a rule it is better to grow leguminous crops as much as possible in order to gather the supply of nitrogen from the atmosphere instead of buying it from the fertilizer works. To bring the soil up to a condition to grow nitrogen-gathering crops frequently requires the plowing under of other green-crops to establish a base of humus to work with, and the liberal use of lime to correct soil acidity caused by plowing under the green manure. By the intelligent use of green manure crops and the application of lime and cheap mineral plant foods it is possible to get the soil in shape to grow these fertilizing crops. After this advantage is once gained it is a comparatively easy matter to adopt a system of cover and fertilizing crops that will furnish about all of the nitrogen the trees can economically utilize, and by applying purchased phosphorus and potassium the trees can be kept in a productive condition, so far as plant food is concerned, at a greatly reduced cost.

NOTES FROM A MARYLAND GARDEN

Cold and wet weather early and cold and drouth later, have made the garden unusually backward. The early tomato plants have been out since the first of May, but they seem to stand still. The old stand-by varieties, Beauty and Success are my reliance for the main crop, while the Langdon Earliana has been the earliest. This season I am trying the John Baer which is claimed to be the best and earliest, costing me $1.00 for a paper of the seed. Then I have the Brimmer, Enormous, Ponderosa, Globe and Magnus. For our hot, sunny climate and sandy soil the Magnus is very good because of its heavy foliage, which protects the tomatoes from sunscald. The fault of all the early tomatoes is the thin foliage.

I usually make the first planting of garden corn in March, but this spring it was well into April before any planting could be done, and the plants now (May 20) are not half as tall as usual, and two other plantings are above ground. For the first corn planting I do not use a sugar corn, but the Early Norfolk Market, an improvement on the old Adams, a very early and good corn. Then I plant the Country Gentleman, for none of the extra early sugar corns are worth the space they take in this soil and climate. Golden Bantam is fine, what you get of it, but it makes ears about as long as one's finger and few of them here, and I cannot afford it room. Country Gentleman and Stowell both do finely and give us good ears. I shall keep making new plantings until August, so that we can have a succession until frost.

Our earliest green onions, the Norfolk Queen, from fall-planted sets have now been used up, and for green onions we are pulling the offsets of the Yellow potato onion. These clean perfectly white, and make a good succession to the Queen. The Norfolk Queen onion is not the Queen of the Northern catalogs, but a larger onion, more like the Pearl, but better than Pearl. I grow my own sets, which are now up and growing, and will be ripened and re-planted in September, and the Potato onions are planted at the same time. The pulling of the green offsets from the Potato onions I think has a good effect on the main bulb and causes it to grow larger, and the same plantation gives us green onions and ripe ones.

Lettuce I have in the frames all winter, and make only one sowing in the open ground. For this late crop I use the Wonderful, a variety similar if not identical with the New York. It makes a very large head and stands the sun better than Big Boston, which bolts to bloom with the first warm weather. May King heads earlier than the wonderful, and this spring I have an unnamed variety sent me by a correspondent in Michigan, which is heading with the May King. Then I have the Cos or Romaine which, held together with rubber snappers, makes very brittle and fine salad.

In the flower garden my plantation of over 2,000 Gladioli, mainly America, have now tops over a foot high and some are forming their flower shoots. Candidum lilies are sending up blooming stems and making buds, and the peony buds are showing color. One of the most interesting among the hardy herbaceous perennials is the Oriental Poppy. These are now throwing their gaudy blooms and their foliage too is handsome. Later they will apparently die down, and in the fall a few green leaves will appear to carry the plants thru the winter. My poppy bed is now three years old, and grows stronger every year. It is easy to grow them if the seeds are sown where the plants are to remain, for it is almost impossible to make them live where transplanted.

The New Cardinal Climber is one of the best of all climbing plants. It is a cross between the Cypress vine and the scarlet Morning Glory, but differs from either in the fact that it makes very few seed, and one has to watch very closely to get any. Last year I started some in the greenhouse and established them in pots, but when I planted them out they seemed to stop growing, and seed planted later in the open ground beat them in growth. These climbed fully 30 feet to the eaves of my office building crossing over the porch and catching on telephone and electric light wires. They bloomed all summer. This spring I have planted the seed along a wire fence.

The beds of Vulcan Begonia, the best of all bedding Begonias have now put on their crimson bronze foliage. In the greenhouse the leaves keep green, but as soon as exposed to the open air they turn to a rich bronze almost crimson, and as they are perpetually covered with their scarlet flowers they make a very pretty bed. I get a great abundance of plants by keeping one or two large plants in the greenhouse. The seeds fall on the sand of the bench and soon I have plenty of young plants to pot.—W. F. Massey, Wicomico Co., Md.

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Study Your Wheat at Thrashing Time

If the ratio of grain to straw is too low, if the kernels are shrunken, your ground lacks Potash. Potash makes long heads well filled with plump, hardy grains.

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CANADA UN-LEACHED HARDWOOD ASHES
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HIGH BRED NITROGEN GATHERING BACTERIA for CLOVERS, ALFALFA, BEANS and OTHER LEGUMES
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Results of Systematic Cow Testing.

By HUGH FERGUS. Tester in Laurel Hill Association, Bradford Co., Pa.

The Laurel Hill Cow-Testing Association of Bradford County was organized during the spring of 1913, with a membership of 29 members. It was not until about September 1 that the work of the official tester was begun. The duties of a cow tester have been stated before in the columns of this paper, but I will briefly enumerate them again.

About the same date each month every member of the association is visited. Weights of the night's and the morning's milk are recorded and a composite sample of the two milkings is taken. From this the percent of butterfat is determined by means of the Babcock test. From the one day's milking and test the pounds of butterfat each cow yields per month is computed. Its value is computed at the price received from the creamery. Also, the weight of both grain and roughage fed each cow, and its value for a month, is determined by charging for it at prices fixed upon by members of the association. By comparing the value of the butterfat with the value of the feed, the profit or loss is found each month and in the course of a year the farmer finds out which are his best cows and which are his boarders.

"PLEASANT PASTURES" IN DELAWARE CO., PA.

Since such a wide area had to be covered to organize the association for its first year's work only the more progressive men are in the association. Hence not many of the so-called "boarder" cows are being found, and quite a few of these are already sold. Also, with only one or two exceptions, the 29 herds are either pure-breds or grades headed by a purebred sire. Therefore this year's testing work will be more to show each member which are his poorest cows and which are his best ones, so that he may know when he increases his herd, what cows to sell and what cows to raise heifer calves from. Another point in regard to the breeding is that by having their cows tested, where they have a cow and her daughter both being tested, the farmer can note the effect of his sire. This has been shown already several times where the daughter is better than her mother; but unluckily the sire was sold for beef before the association started. It was only by testing that this difference was noted.

The statement is frequently heard that a one day's test is not a fair criterion by which to judge one month's work. One man uses the same kind of scales I do and milks regularly. Each milking of every cow in his herd is weighed and recorded. One month when his 24 cows were at about the best part of their lactation period, I compared my one day's average with his total for the month and the greatest variation of any of the cows giving 600 to 1,000 pounds of milk in one month was 25 pounds; some of his cows giving a little above and some a little below my figures. Also in regard to the pounds of butterfat: Another farmer keeps an accurate account of how much milk he uses daily for his family. Taking the total pounds of milk he uses in a month and multiplying it by his average test, then subtracting these pounds of butterfat from the estimated total, I estimated his production. Figuring 30 days from a one day's test there was less than 2 percent variation from the pounds his creamery paid him for.

Some farmers not in a cow-testing association have a cow tested once or twice in her lactation period, or perhaps only once or twice in her life, and then tell their neighbors that this cow tests so much or so much. But this may be far from what a cow's real average is in a year. For instance, the most variable cow in the association, while giving over 20 pounds of milk per day, varied in her test from 3.1 to 6.1 percent. This is the greatest variation I have observed but it shows how unreliable one test is.

I have found that a "boarder" cow is often a boarder not because she does not have the ability to produce the milk or butterfat to pay for her keep, but because of the man who feeds her. She may be fed a proper amount of roughage but is skimped in her grain, thus not bringing the best out of her that she has in her. Or, she may get too much grain, which is out of proportion to the amount of milk she gives. The roughage in Bradford County this past winter was practically all timothy hay and corn silage, with little grain in it, and that frosted before being put into the silo. With such feed for the cow to do her best with from month to month, it has required from 3 to 4 pounds of grain (depending on the yield of milk, kind of grain and kind of cow) to produce a pound of milk.

The most economical producers of milk in the association are the Holsteins and Ayrshires, while the cows that produced a pound of butterfat cheapest are the Jerseys and Guernseys. Also, the cows that are producing either milk or butterfat cheapest and bringing in the greatest profit to their owners are those producing the largest amounts. A cow producing 10 pounds of milk per day requires practically as much roughage as one of the same size producing three times as much. It takes the same amount of milk or butterfat from either to pay for this roughage, hence the cow producing the most has that much left over and above that of the 10 pounds per day cow to pay for her grain and yield a profit.

In a comparison of the roughages, clover and alfalfa hay have required the least amount of grain to be fed with them. However, there was one exception. One farmer had excellent oat and pea hay. He fed good clover hay most of the winter and when he changed from the clover hay to the oat and pea hay and on the same grain ration, most of his cows showed a slight increase in their daily milk yield. Twenty-five of the twenty-nine farmers in the association have silos, but this past year, on account of an early frost, there was not as much silage as usual and the corn crop had to be put into the silo before mature, so corn silage did not show up as well as it probably would have if it had been of a better quality. Every farmer owning a silo had to use some oil meal with his silage in order to make it laxative enough for the good health of his cows. Most of the clover during the winter of 1912-13 was killed by frost, so the dry roughage was mostly timothy hay. When the silage was gone and timothy hay was the sole roughage there was not as much of a drop in milk yield on the same amount of grain as might be expected; that is, not when enough oil meal was put into the grain ration to make the droppings from the timothy ration as loose as they were when silage was fed.

Where the grain ration was kept laxative enough all winter it showed to quite an advantage, both in the health of the cows and in their milk flow. These cows whose bowels were not kept loose were subject to occasional fever: sa udders, indigestion and lower milk yields. The point of keeping a cow's bowels in loose condition both before calving and while in lactation cannot be emphasized too much.

With four or five exceptions the farmers used balanced rations, either of my or their own makeup. These were all computed with the idea in view of cost, bulk, palatability, variety and healthfulness on the cow. Since most of the roughage was timothy hay and corn silage, the proportion of one pound of grain to 3 to 4 pounds of milk was fed, and usually not less than three pounds of grain a day to a cow even when giving less than 10 pounds of milk daily. The following are some of the grain mixtures that produced the best results with silage and timothy hay or timothy hay alone:

No. 1.—200 pounds corn meal, 100 pounds gluten, 100 pounds bran, 100 pounds cottonseed meal and 50 pounds oil meal.

No. 2.—100 pounds corn meal, 400 pounds brewers' grain, 300 pounds gluten, 200 pounds cottonseed meal and 100 pounds oil meal.

No. 3.—100 pounds corn meal, 200 pounds brewers' grain, 200 pounds gluten, 100 pounds cottonseed meal, 100 pounds bran and 50 pounds oil meal.

No. 4.—200 pounds corn meal, 100 pounds bran, 100 pounds distillers' grain, [illegible] pounds oil meal and 100 pounds cottonseed meal.

No. 5.—200 pounds corn meal, 100 pounds brewers' grain, 100 pounds oil meal, [illegible] pounds bran and 100 pounds gluten.

No. [illegible]—300 pounds corn meal, 200 pounds distillers' grain, 100 pounds oil meal and 100 pounds gluten.

No. 8.—200 pounds corn meal, 200 pounds gluten, 200 pounds bran and 60 pounds oil meal.

No. 9.—200 pounds bran, 100 pounds gluten, 100 pounds corn and cob meal, 100 pounds rye, 100 pounds distillers' grains and 100 pounds oil meal.

Besides these there were other good rations consisting mostly of a mixture of the above grains in varying proportions. It will be noticed that some of the above rations make a rather heavy mixture, but most of these were fed on top of the ensilage which, when eaten with it, did not produce any harmful results. Probably the best mixture for dry cows fed during the winter was 100 pounds hominy, 100 pounds oats, 100 pounds bran and 100 pounds oil meal, fed at the rate of from 2 to 8 pounds per day.

Some of the practices among the farmers which go along with good feeding and help increase the milk production are: 1. Regularity in milking. 2. Having the same milker for each cow all the time. 3. Regularity in time of feeding. 4. Keeping the cows well bedded. 5. Keeping the cows curried off. 6. Feeding salt daily or keeping it where the cows can have access to it at all times. 7. Providing clean water at least twice daily and in winter with the icy chill taken off by a tank heater. 8. Kindness to the cows. 9. Allowing a rest of four to eight weeks between lactation periods, and grain fed during this time.

WILSON BUTTER BOY DE KOL PRINCE 119115, WEIGHING 400 LBS. AT 4 MONTHS.
Owned by H. R. Downham, Kent Co., Del

This is the ninth month of testing and almost without exception the dairymen are satisfied. One man, a renter, is having his landlord's herd tested at his own expense. He said "If only I had begun this work eleven years ago when I started renting, I would have an entirely different dairy than you are testing and would likely own my own farm instead of renting all these years." Another young farmer was so doubtful that he did not join the association until the second month. Now he not only expects to join another year but has persuaded his father to do likewise. The owner of a herd of Ayrshires has been breeding purebreds for 30 years but never realized their worth until joining the cow-testing association. Now he is running eight of them in a test for the Advanced Registry and expects to run the remainder of his herd as fast as they come fresh. Three other breeders of purebreds expect to enter their cows in a test for the Advanced Registry of their respective breeds during their next lactation period, besides having them in the Cow-Testing Association also.

Nearly every herd has its surprises. What were thought to be the best cows in the herds are often proving to be only average cows, while some cows that were little thought of are proving to be among the best.

FASHION IN COWS

Hats Off to May Rilma, the Queen of Cows, owned by Captain Cassatt of the State of Pennsylvania. But how soon will she abdicate her throne? How soon will her place be filled by some other cow of royal blood? How soon will her throne be usurped by some Grand Daughter of King Segis, King Hengerveld, King of the Pontiacs, King of St. Lamberts King, Prince Rosendale, King of the May, or Prince Barkley? Pink teas and narrow skirts are the fashion today, but will they be a year hence?

Since May Rilma's wonderful record of 1,073.41 pounds of fat in 365 days was known to the public, all the letters received by the Department of Agricultural Extension of State College requesting names of breeders, have asked for Guernsey cows. For its the fashion. Pennsylvania has the World's Record cow, the world's record Guernsey cow, Ayrshire cow, Shorthorn cow and the world's record 2-year-old Jersey. Three world's records have been broken in the past year by Pennsylvania cows.—L. C. Tomkins, State College, Pa.

How To Use The Babcock Test.—"Before 1890, when the Babcock test was invented, no simple, accurate method was known by which the farmer could measure the richness of the milk or cream which he sold or of the skim milk which remained." So states Circular No. 27 of the Wisconsin Experiment Station, mailed from Madison, Wisconsin, which is an attempt to explain and illustrate the Babcock test in a simple manner. This bulletin goes on to state that "the Babcock test saves many times its cost and at the same time is enabling farmers to select their best cows and improve their herds as rapidly as possible." Every farmer should be acquainted with this test.

Milk Hygiene.—Circular No. 25 of the State Livestock Sanitary Board, issued from Harrisburg has some very valuable pointers in it for the dairyman. It deals with the dairy herd in general and takes up such specific points as grooming, sick cows and their treatment, feed, water, stables, the milk house, the ice house, utensils to be used and the handling of the milk, including straining and cooling. Coming as it does from the State Livestock Board, this bulletin carries with it undisputed authority.

Dairy Feeding And The Home Mixing Of Feeds.—Circular No. 7 of the New Jersey Experiment Station under the above heading has for its purpose a brief explanation of "the basic principles involved in the balancing of feed rations for dairy cows and the illustration of the use of these principles in compounding rations and grain mixtures to be fed. Sample rations and rations to be fed in connection with other products are given in tabular form. Methods for calculating balanced rations are included in this bulletin, which is mailed from New Brunswick, N. J.

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(7)

Live Stock

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If we make the proper selection of breeding stock and raise the kind of colts that Mr. Geo. Richards, of McKean Co., Pa., does, we need not fear low tariff on live stock so long as the horse market holds up to present conditions. The accompanying cut shows two of Mr. Richards' colts, bred from heavy work mares and a purebred Percheron stallion. Note carefully their fine clean-cut heads and faces, denoting quality; their good backs, shoulders, legs and joints, just the kind that if given a chance will develop into fine individuals and bring long prices. They need very little preparation for market and are very easily sold.

COLTS FROM HEAVY FARM MARES AND PUREBRED STALLION.
Owned and Raised by Mr. George Richards, McKean Co., Pa.

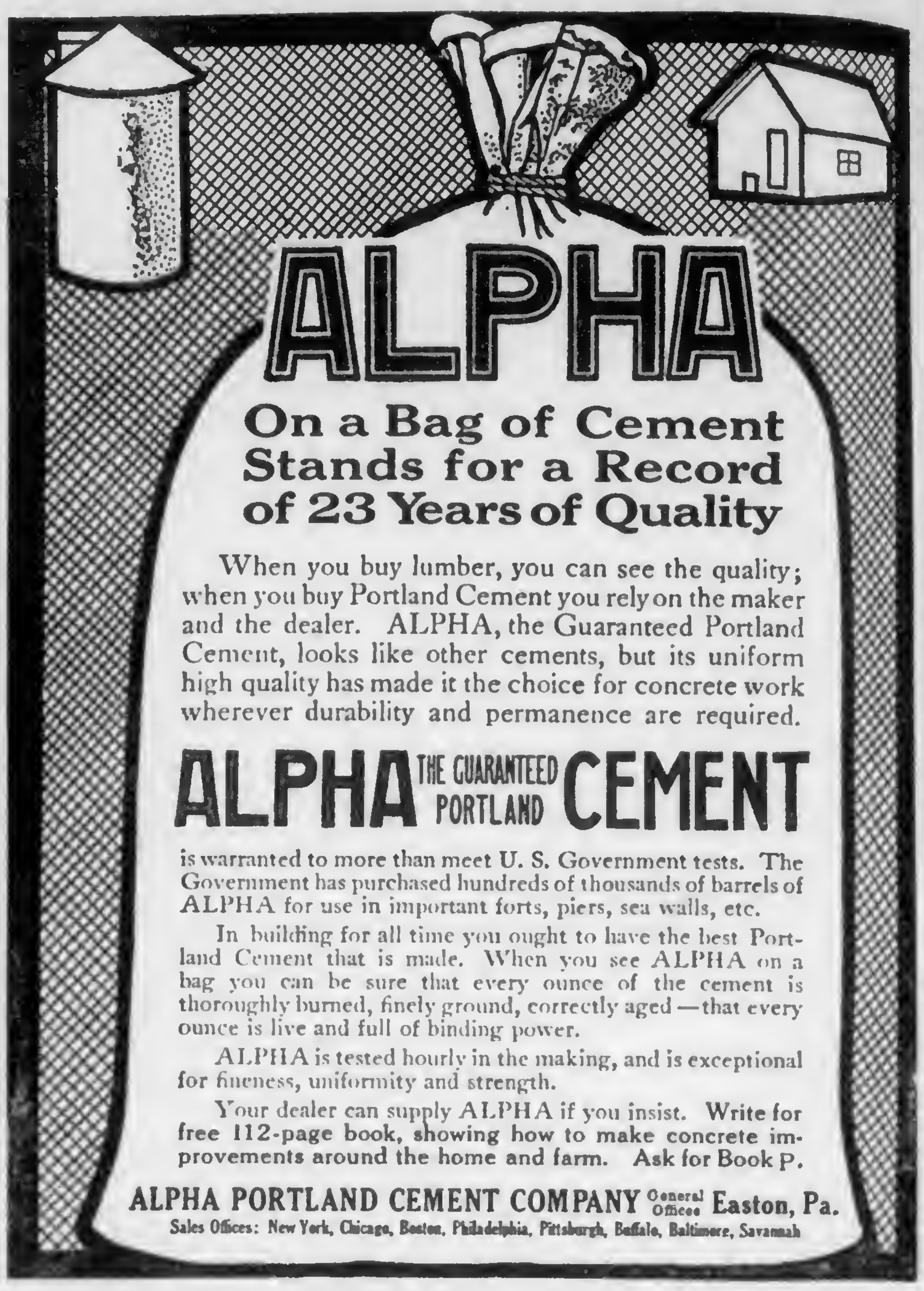
Mr. Richards keeps a very close account on his growing stock, because he knows that if they do not make a steady growth and keep it up right from the start they cannot ever reach their maximum size and weight. And he knows that food eaten by a young animal that is not growing yields no profit. So he weighs his colts at birth and at frequent intervals afterwards, and keeps posted as to just what they are doing much better than he could possibly do by observation. If you have never kept account of the weight of a young colt, just try it with the next one you raise. You will get some surprises. I have done it but did not succeed so well as Mr. Richards in results. But I found it very helpful to know just how they were growing. It will guide one in the feed work and in the care of the mother to the colt's advantage. The scales are accurate; the eye may be influenced by so many surrounding conditions.

A TRIO OF COLTS ON RICHARDS' FARM MAKING STEADY AND PROFITABLE GAINS.

The colt on the left in the illustration weighed 157 pounds at birth, and at 30 days old weighed 287 pounds, showing a gain 4 1-3 pounds daily. At 60 days it weighed 408 pounds, gaining 4 1-5 pounds daily. At 90 days its weight was 515 pounds, making about 4 pounds daily; and at 5 months and 3 days old it weighed 675 pounds, showing an average gain of about 4½ pounds per day from birth, and reaching almost one-half of its probable mature weight in five months.

The colt on the right of picture weighed 153 pounds at birth and at two months old weighed 427½ pounds, showing a daily gain of 4½ pounds. At eight months old it weighed 805 pounds; more than one-half of its mature weight and had averaged 2¾ pounds per day gain from birth. Now these colts were not especially fed or prepared for show, but they are just his regular growing stock and in good growing condition—the way Mr. Richards finds it most profitable to keep them.

The three colts in the lower illustration are from the same sire. The one on the right, 3 years and 4 months old when photographed, weighed 1,450 lbs. at that age, and is a full brother to the one on the extreme left. The other two are 14 months old. Mr. Richards has a good sized farm from which the timber has been taken. He is raising horses, cattle and sheep to clear up the second growth timber and he is incidentally making a good profit on his stock. He has the right kind and makes it good. He is much interested in Ayrshire cattle for his conditions. He is making good on land at which a Lancaster County farmer would throw up his hands in holy horror. And he has a fine family of boys and girls that is sticking to this rough land because it is the best place in the world for them to be, and they like it.—Dr. M. E. Conard, State Farm Adviser.



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NEEDS FOR FARM WOMEN

We have often made the statement that the trouble with farming is a legislative trouble. Not that there was any desire to disapprove or discount the many efforts that are being made to relieve the situation by organization, co-operation, education and more direct dealing. All these things are helpful to relieve the rigor of a bad situation; but are not in the nature of a solution of the problem. They benefit only those who take advantage of them; but with a legislative benefit it is different. If, for instance, a live bunch of people like the grangers make a campaign and defeat a proposition to bond the state, they do not get the benefit themselves, but the whole state gets it. The grange and the progressive dairymen of the state fought the oleo manufacturers until we got a good law in this state, but the whole state, producer and consumer alike, got the benefit. In these legislative victories the strong help the weak and the general welfare is improved.

Give all the farmers equality before the law, which is the right of every citizen; give them a fair field and no favors, and they will not only take care of their own business but will continue to raise, develop and train the brains and brawn to set the pace in very many of the other lines of business and work. It is for this reason that we have so little regard for so many so-called uplifters; refusing to give the farmer his right to equality before the law and trying to make him satisfied with what in his own heart he knows is not a real solution of his trouble.

What is true of the men of the farm is also true of the women of the farm. Representations of a terrible condition of ignorance, unsanitation, isolation and drudgery have been spread far and wide in the press of the country. Dozens of plans and suggestions have been, in the same connection, offered as a remedy for the condition. In many of these plans the idea is put forth either covertly or directly that the meanness and penuriousness of the farmer husband is a large factor as a cause of the difficulty. From my experience in a great many farm homes I never felt that this was a just charge; but that the sense of the resolution here given went really to the heart of the matter. This resolution was sent to secretary Houston in answer to his letter of inquiry into the condition of farm homes, and was published in our National Grange Monthly:

"Resolved, that we of Garden City Grange No. 280, Snohomish, Wash., offer the following for consideration: We respectfully hold that in this broad, fair land of ours, every farm home should be a sanitary abode and in order to free the farmer's wife from the soul-warping drudgery in incessant toil and to secure to her the degree of leisure necessary to develop and cultivate latent and dormant talents and abilities, that every home should be equipped with labor saving devices such as—water under pressure, cold and hot— a sewerage system or sanitary cesspool—power to run washing machine, wringer, churn, etc.,— a light plant—cabinetted kitchen, and the many useful and clever devices for saving time and steps.

"We are also of the opinion that the humdrum existence of the average farmer's wife and the lack of labor-saving devices in the average farm home, are not due, except in rare cases to the penuriousness and selfish conduct of the farmer husband, but are caused by economic and social conditions over which the individual farmer has no control.

"We are also agreed that the economic, social, educational and home forces that can elevate the agricultural pursuit to a higher estate will automatically bring about the betterment of conditions for the farmer's wife."

Then follows a demand for co-operation, direct dealing and a comprehensive legislative program. The presence of machinery outside the house and not inside has been cited as a proof of the assertion that the wife is not getting a square deal. But my observation is that the fact of so much machinery on the farm is one of the great troubles of the farmer today. He realizes that he cannot get the labor that he has to have in order to care for his crops and yet while he is able to get along by the application of machinery, he knows that the extra capital involved together with the repairs and storage is a continuous and serious trouble which he would gladly escape. It must not be forgotten that there is a natural reason for the fact that machinery was not applied in the house as early as it was on many farms, and that is there was no suitable power to apply. Steam was practically impossible. Wind was too uncertain and even the gas engine is far from a pleasant machine for a woman to run.

What will eventually be done and what should be done now is to turn these mill properties that are fast losing their business because of grinding done on the farm, into power houses for the production of electric light and power. Electricity is such a cleanly and convenient power for home use. Here is an opening for splendid community work among the granges to prevent these old mill stands from going into decay by organizing them into power houses. The owners of these properties would hardly feel safe in going to the extra expense of fitting them for this work, but with community organization ready to take the power as soon as installed, it would be an easy and inexpensive change.—John A. McSparran.

LOCATION OF EARTH ROADS

The cost of hauling over country roads is largely determined by the size of the load that can be hauled, the number of trips that can be made in a day and the wear and tear on teams and equipment. Steep grades as well as ruts and mud-holes serve to decrease both speed and the load. On the principle that a chain is no stronger than its weakest link, the maximum load that a team can draw is the load that it can draw up the steepest hill or thru the deepest mud-hole on that road.

The elimination of one or two steep hills on a line of road will frequently enable horses to draw three or four times as much as they could draw on the old road. It takes approximately four times as much power to draw loads up 10 percent grades (10 feet vertical in 100 feet horizontal) as on a level, but on a 4 or 5 percent grade a horse can usually draw (for a short time) as much as he can draw on a level. A 4 percent grade is therefore considered the maximum on roads subject to heavy hauling. Many steep grades may be avoided by locating the road around instead of over the hill,—the handle of the bucket is no longer when held in horizontal position than in a vertical. By going around we avoid two steep hills.

If the road must pass up a hill or mountain sides, the steepness of the grade may be decreased by increasing the length of the road. In other words, eliminate steep grades by locating the road on curved or zigzag lines, and not in a straight line from the bottom to the top of the hill. These curves should be carefully plotted and the straight stretches located with an instrument. In studying the relation of grade to distance the following calculation is interesting: To lift a ton one foot high requires 2,000 foot pounds of energy; on a road the surface of which offers 100 pounds of tractive resistance per ton the same energy would roll the ton a horizontal distance of 20 feet. To save one foot of grade the road may therefore be lengtnened 20 feet.—Office of Public Roads.

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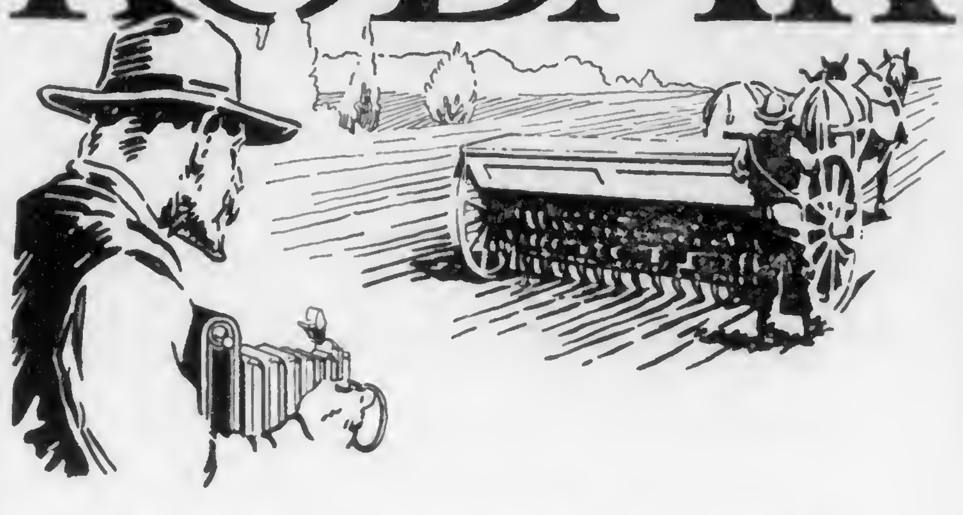

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Philadelphia, Pa., June 6, 1914.

Rural Credits Abandoned

Reports from Washington indicate that President Wilson will not force action in rural credit legislation in this session of congress. It is pointed out that the federal reserve bank act will extend credit aggregating $500,000,000 on farm lands and that this will largely cover the ground for which rural credits were designed. There are not likely to be any important protests from farmers against this delay. Opinion seems to have gained ground that the bills introduced were not designed to meet the needs of the farmers in credit requirements. It is doubtful if any special federal law can be made general enough or flexible enough to meet the rural credit needs of the entire country. Recognition of farm property as a basis of credit on the same grounds that other forms of property are recognized is all the farmers ask. Had this been granted there would be no need of special rural credit legislation. Without such recognition, it seems doubtful if any form of credit law will give relief. Communities that are really in need of credit extension would do well to profit by this delay and try the solution of their own problem by the organization of co-operative credit systems or co-operative banks upon the familiar plan of building and loan associations. A few successful experiments of this kind will be a good indication of whether or not there is a real need of a rural credit law.

Labor Requirements

In these days of scarce and high-priced farm labor it is important that farmers study somewhat closely the labor requirement of the various crops grown on their farms. Such study may not influence the character of farming done or bring about any important changes in crop rotations, but it will assist in determining more closely the crops which are costing most in expensive labor. Perhaps the greatest value of such a study will lie in determining the normal labor requirement of each crop common to a locality, from which the farmer who is seeking for highest efficiency in his farm management may gauge his results. From this he can measure the relative advantage of his system and his equipment and measure the efficiency of his working force. The Bureau of Farm Managament, thru its monthly circular, gives figures obtained in such an investigation conducted in Jefferson County, Ky. The figures are of little or no direct value to farmers of northern states, but are interesting as showing comparative labor costs of different crops in the section studied, and suggesting a basis of record in similar studies elsewhere. The figures represent the total labor cost in completing the production per acre of each of thirteen crops expressed in terms of labor units for man and horse. The labor unit for man represents one day's work for one man, and for horse, one day's work for one horse. Figures on the crops grown in this section follow:

Crop	Total Units Man Labor	 Horse Labor
Potatoes, 1st crop	10.2	13.4
Potatoes, 2nd crop	9.5	13.3
Wheat	1.	1.2
Corn	4.3	5.4
Clover hay	1.1	1.0
Timothy hay	3.4	4.5
Soy Beans	3.9	5.3
Onions	21.8	13.7
Sweet Potatoes	12.5	7.6

Bending the Twig

The following statements from Dr. Frank Moore, superintendent of the New Jersey Reformatory, are of interest as indicating the causes of failures in "the best farm crop." He referred to a study he had conducted as to the causes which bring young men into the reformatory. Of course few of these were farm boys, but early impressions and youthful teachings have the same effect upon the young minds of the country as upon those of the city. His records show that of 350 men received at the institution in one year, about 70 percent were from indigent families where poverty was very great and where the first lesson in crime had been given by the parent who had suggested that the son go out and procure fuel. About 60 percent were from illiterate families where the child had even been encouraged by the parents to avoid the truant officer. About 50 percent were from broken families where death or divorce had broken up the home. About 33 percent were feeble minded. In a great many instances these boys, when given training adapted to their individual needs proved themselves valuable members of the community. These figures place the responsibility for the great majority of criminal lives upon the parents, and the training or lack of training given when the child is young. The responsibility which you and I will feel in the condition of the parents and the blighting of young lives depends upon our conception of our duties as citizens and our actual reply to the question of old: "Am I my brother's keeper?"

Trade in Foodstuffs

The Department of Commerce has just made public the figures showing imports and exports of foodstuffs during the first six months under the new tariff duties. It is shown that imports of foodstuffs in their natural condition, including food animals, increased from $117,194,237 in the half year ending with March, 1913, to $143,421,536 in a like period ended with March, 1914; also that imports of foodstuffs partly or wholely prepared for use in the same period advanced from $95,744,241 to $100,967,378. Exports of crude foodstuffs fell from $115,850,453 in the same six-months period in 1913 to $55,483,787 in 1914, and manufactured food products from $180,007,422 to $162,022,620; making a total loss in exports of more than 50 percent. Thus home consumption of domestic foodstuffs has so nearly overtaken home production that we are not only reducing our sales abroad but are greatly increasing our purchases of foreign foods. The balance of trade in foodstuffs is with foreign countries in the six month's period under the new tariff, the total imports being $244,000,000 and total exports $217,000,000. In 1898 the imports of foods for the entire 12 months was $190,000,000 and the exports were $590,000,000. Thus the balance of trade in foods was about 1 to 3 in favor of the United States in 1898; about 1 to 1.24 in our favor in 1913, and in the first six months of the fiscal year 1914 it has shifted to about 1 to 1.12 in favor of foreign countries. The articles showing largest increases in importations in the last six-month period are fresh beef, cattle, corn, wheat, rice, macaroni and fruits.

NORMAL INSTITUTE MEETING

The annual Normal Institute and spring meeting of the State Board of Agriculture was held at Stroudsburg, Pa., May 26-28. The rush of spring work, due to the lateness of the season, interfered seriously with the attendance of local farmers, but there was a good gathering of farmers' institute workers and agents of the state department. The occasion served as a get-together meeting for these workers and it was a real normal school of instruction and discussion of matters of general and mutual interest to institute men. The program was made up largely of speakers from the state staff, and this departure from the custom of previous years appeared to add rather than detract from the general interest of the meeting.

Two sessions were given to the discussion of specific questions of institute management and work. Mr. Martin, director of institutes, reported attendance at institutes constantly increasing. In the season just closed there was an aggregate attendance of 208,000. These were reached by the expenditure of $22,000. At present there are nearly a thousand applications for institutes next year that can not be filled because of lack of funds. The new farm adviser service has been in active operation a little less than one year. In that time the advisers have made 25,055 farm visits and have requests for their services which will keep them busy thruout the summer. The reports of the different advisers indicated a closer grasp of general as well as individual problems than had been possible thru any previous effort in institute work, and corresponding results with the farmers who had important home problems to solve.

One session was given to the discussion of household economies and rural home problems. Club organizations, school hygiene and arrangement of water supply and drainage in the farm home were subjects discussed. Mrs. Jean Kane Foulke, state adviser on home economics outlined the work done in her department in investigation of sanitary and water supply conditions. Her recommendations on water supply and sewage disposal have been published in bulletin form and may be secured free by addressing the State Department of Agriculture, Harrisburg, Pa.

The soil improvement session was perhaps the most spirited and of greatest practical value from the farm standpoint. Differences of opinion indicated that there is still much to learn on the general question of soil improvement and on best methods of building up and maintaining soil fertility. The comparative values of raw rock and acid phosphate came in for much discussion and the consensus of opinion seemed to be that the practical value of raw rock, except under special conditions, has been greatly overestimated and that greater use of acidulated rock would prove more economical for general use. A wise caution urged in this discussion was that value of improvement methods must always be counted by comparative cost of treatment. Certain courses of treatment give quick and striking improvement but are not profitable to the average farmer because of the high cost of treatment.

Interest in the dairy session centered in the cost of production and the cow, the care and the feed necessary to produce maximum yields at lowest cost. One session was given to poultry work, with discussions on maintaining health and vigor of fowls, profitable egg production and an illustrated discussion on how success is achieved in the handling of turkeys. The horticultural session took up production and marketing of apples and gave a particularly timely discussion of truck farming in its various phases.

The troublesome road question came up, as it is bound to do in all farmers' gatherings so long as present conditions exist. Either by accident or to reply to severe criticism of Department methods early in the meeting, Mr. Jones, of the State Highway Department, appeared "to give a complete and definite statement" of what was wrong with our roads. But Mr. Jones was definite on only one point, that of the automobile license fund being held up and not made available for road work. He was extremely indefinite on the amount of money available from other sources and what has been done with it; also as to who is responsible for permitting the roads to get into their present condition where the temporary hold-up of a secondary source of funds can apparently paralyze the entire Department. The Department is going to much pains to advertise the "political animosity" which is responsible for the present tie-up in road matters, but the impression is rapidly growing that the road officials are indebted to their fellow officials in the state house for providing them with a much needed excuse for present road conditions. Mr. Jones was highly successful in confirming that impression.

The people of Stroudsburg proved royal hosts to the visitors, extending every courtesy and making every provision for their comfort and enjoyment. Special features provided were a reception given by the Chamber of Commerce on Wednesday afternoon and a trolley trip to the beautifully picturesque Delaware Water Gap on Thursday afternoon.

STATE CAPITAL NEWS

Millions For Roads.—An appropriation of approximately $10,000,000 for betterment of highways of the commonwealth will probably be recommended to the next legislature by people active in the cause of good roads, this sum to include liberal appropriations to townships for improvement of their highways along approved lines and an amount equal to the automobile license income for purposes of maintenance. Governor Tener has been making a careful study of the whole highway proposition in Pennsylvania and while he has not yet indicated what he will do in the way of an appropriation it is thought that he will be liberal in fixing figures. The defeat of the bond issue showed that the people of the state believed in the pay-as-you-go principle and it is a pretty safe promise that roads will get first consideration next winter. Every candidate for governor is committed to road improvement. Incidentally, the next legislature will end any chance of controversy in the future in regard to the use of income from automobile licenses. The State Board of Agriculture and Farmers Normal Institue at the meeting at Stroudsburg took action pretty well anticipated here and that policy is certain to be carried out, altho it will require a big change in the methods of making appropriations to give Pennsylvania adequate funds for road improvement.

Creamery Wastes.—An important conference, which attracted little attention from the newspapers, was held here during the week just closed between the officials of the State Veterinarian's division and representatives of the creamery interests of western Pennsylvania. It was for the purpose of agreeing upon regulations for the pasteurizing of milk sold by creameries for feeding of cattle. Authority to carry out this provision was given by the last legislature and the state veterinarian will draw up a set of regulations which will be scanned by the creamery people and then put into effect. It was stated that the conference resulted in a valuable exchange of views.

Cutting Down Crossings.—A gratifying rate of progress is being made by the railroads of the state in getting rid of grade crossings. No less than twenty propositions to agree upon steps for abolishing such crossings came before the Public Service commission for approval last month and most of them will be followed by immediate work. The bulk of such improvements are in cities or their immediate neighborhoods. There is a disposition to avoid the risk of accidents along main highways or much traveled roads.

Violated Cattle Laws.—Agents of the State Live Stock Sanitary Board have ended what is believed to have been a source of violation of the cattle quarantine laws in the Western end of the state. Cattle were being driven into this state from Ohio without being inspected.

Seed Law Enforced.—Practical operation of the "pure seed" law of 1913 has resulted in prosecutions for the sale of grass seeds not up to the standards. The law was enacted to keep down noxious weeds and some of the mixtures which are full of nuisances. Samples taken have shown that either goods carried over from last year or some mixtures which were flatly against the percentages set out in the act were being sold.

Oleo In Cities.—Agents of the State are commencing to turn up violations of the oleo law in some of the cities. In several places oleo was palmed off as butter after having been colored and it is thought that some of the people who were arrested two years ago in what was pretty close to an organized illegal traffic are figuring in the sales. Seven arrests have been made in Philadelphia.

Test On Traction Rules.—Dauphin County judges now have under consideration an action to test the right of the highway commission to require owners of traction engines to agree in advance to rules and regulations. The test suit was brought by a Dauphin County man and the point at issue is whether the owner can be bound in advance to repair roads or bridges which may be damaged by his machine. The criticism was made that persons were forced to accept rules not yet promulgated. This action is not affected by the setting aside of certain traction engine rules by the highway commissioner recently.

Agricultural Education.—This year for the first time the examiners in the normal schools will pay particular attention to the qualifications of the graduates as regards preparation for instruction in agriculture. For some years courses in this line have been given, but the state authorities are now making a special effort in the line of preparing men and women to give practical instruction in agricultural education owing to the demand from many country districts. In the course of a few years many teachers will be equipped with a knowledge of practical agriculture. Several officers of the State Board of Education have been working the last year to stimulate the interest in elementary agriculture in many districts of the State. The universal lament has been the lack of specially trained teachers.

Many Attend Meetings.—This week marks the close of the summer orchard demonstration season. The attendance has been equal to or even better than in 1913. The number of questions pouring in on Zoologist Surface from orchard owners is far greater than ever known and indicates the growing interest in fruit growing.—Hamilton. Harrisburg, June 1.

NEW YORK LETTER

Jobs for The Jobless.—The new Bureau of Employment created by the last legislature will be put into operation August 1. The principal office of the Bureau will be in New York City with nine branch offices in Albany, Utica, Syracuse, Rochester, Buffalo, Elmira and either Ogdensburg or Watertown. A director will be in charge of the New York office whose salary will be $4,000 and each branch will have a superintendent at a salary of $2,000. Commissioner Lynch says that the important function of this new bureau will be to investigate the causes for unemployment and then to seek the remedy for the situation. All services rendered by the bureau for those out of work will be free.

The New Bank Law.—The constitutionality of the new Van Tuyl banking revision law is to be tested in the courts. Especially, the provision relative to the transfer from the Comptroller's department to the state banking department of the jurisdiction and supervision of private bankers is to be tested out.

Cold Storage Law.—There have been about 40 prosecutions for violations of the cold storage law since January 1. There have been 13 convictions 11 dismissals, five held for Special Sessions and 10 not returned.

A Cornell Gift.—Announcement has been made of the gift of $100,000 to Cornell university by an unrevealed donor. It is intended to devote it to the building of college dormitories. As the money is available now work will be commenced as soon as bids are received and accepted.

Convicts on Roads.—According to the superintendent of prisons, about 250 miles of road will be built this year by convicts of the state prisons. He is given authority by law and also has an appropriation of $50,000 to experiment with convict labor on the highways and the superintendent proposes to let them make dirt roads instead of macadam, as the appropriation would be sufficient for only about 12 miles of macadam while very much more can be built of dirt.

News Items.—Conferences of cheese instructors have been held this week at Allegany and Varysburg. On June 25, the annual meeting of the state association of county superintendents of highways will be held at Ithaca. Commissioner Carlisle and Senator Murtaugh will be the speakers. The Otsego County Farm Bureau and the superintendent of schools are co-operating in a potato-growing contest for the pupils of the schools. The first prize winner will get a Holstein calf.—D.

MARYLAND NOTES

Strawberry Crop Threatened.—The continued dry weather threatens both yield, size and quality of strawberries. In Anne Arundel County and on the Eastern Shore, the continuous dry weather is having serious effect on the berry, and green pea crops. The pea vines are infested with lice or aphis, and in many places have dried up. Complaints are also made that worms and insects are commencing to attack tomato plants.

Sea Food Abundant.—Ocean City, Md., is becoming an important sea food supply section. On a recent Monday morning the catch of fish was the greatest ever had there. The nets were full and boats were loaded from the water before seines could be hauled on shore. The catch was 1,400 barrels of sea fish which were packed at once and a special train of 16 cars started north with the entire catch the same day.

Preserving Plant Equipement.—The Berlin Preserving Company has a new building 60 by 100 feet to be used for the capping of strawberries alone.

Fruit Predictions.—Fruit growers in Harford County declare there is every evidence of a big yield of all kinds of fruit. May frosts last year ruined the fruit. Even with a heavy June drop of fruit it is concluded the crop will be a "bumper" one.

NEW FORESTRY BUILDING AT CORNELL UNIVERSITY.

FORESTRY BUILDING AT CORNELL UNIVERSITY

On Friday, May 15, the new Forestry Building at the Agricultural College, Cornell University, was opened. New York State, with its many acres of rough land unsuited to agriculture, is becoming thoroly awakened to the practicability of forestry. The opening of this new building can not help but stimulate interest thruout the state. The Department of Forestry was established not only to give instruction and to conduct research, but to give direct help to the owners of forest lands in New York State, which it does by correspondence, lectures, and personal inspection of woodland, or land to be planted.—D.

COUNTY NOTES

Green Co., Pa., (S.W.) May 22.—Weather has been fine during last two weeks. Little live stock changing hands in this community at this time. Corn, $1 bu.; wheat, $1 at mill; eggs, 18c; butter, 22c; chickens, 16 to 17c lb.; oats, 55c bu. Farm work has been rushed during the last two weeks but there is still much corn to be planted. Oats was sowed very late.—C. E. Addleman.

Warren Co., N. J., (N.W.) May 21.—First part May wet and cold; now dry and hot. Stock looks good, being turned on pasture. Cows are high. Pigs $3 to $3.50 apiece. Grain looks good, as does the grass. Oats sowed, potatoes planted. Corn planting in season now. Ground getting dry and hard to plow.—V. R. Loller.

Fayette Co., Pa., (S.W.) May 24.—Has been very warm and dry for the last ten days. The small streams are beginning to show the effects of the dry weather. Most of the livestock wintered nicely and went on pasture in good shape. Pasture stock is in great demand. Pigs are very scarce and high, selling at $10 pair. In spite of the late spring farm work is in pretty good shape. Corn and potatoes all planted and spraying mostly done. Fruit is promising a medium crop.—Samuel A. Harris.

Crawford Co., Pa., (N.W.) May 28.—Warm and dry for ten days. Cows milking well. McJunkin Co., pays $1.30 per cwt. for 4 percent milk. Veals, 8c; eggs, 18@20c; butter, 30c. Wheat looks good. Meadows fair. Lots of fruit blossoms. Farm work very late; wet weather. Oats about all sown. Farmers planting corn and potatoes.—J. F. Seavy.

AMERICAN GUERNSEY CATTLE CLUB MEETING

The annual meeting of the American Guernsey Cattle Club was held in New York City. The report of the work of the Herd Register for the year ending April 30th, showed a remarkable gain for this year. During the last 20 years the number of Guernsey registrations and transfers has increased ten-fold and no small percentage of this is due to this last year. The membership in the Cattle Club has increased from 131 to 591.

The American Guernsey Cattle Club is now in a very prosperous condition. This last year's business showed an income of $76,448.83 with a balance on hand of $4,056.03. This together with the invested funds, office building and invoice of fixtures and Herd Books on hand, makes a present worth of $41,119.76. During the year there were imported 1,150 head of Guernseys.

The work of the Advanced Register showed 1,100 cows, owned by 193 breeders and representing 27 states, were on test. The most remarkable record of the year was that of May Rilma who made a record of 1,073.41 pounds butter fat, which exceeds that of any cow in the world. The 2,957 records in the A. R. show 526 cows with a milk yield of over 10,000 pounds and 25 over 15,000. Four hundred and seventy-three cows have butter fat records better than 500 pounds and 11 exceed 800 lbs. for the year.

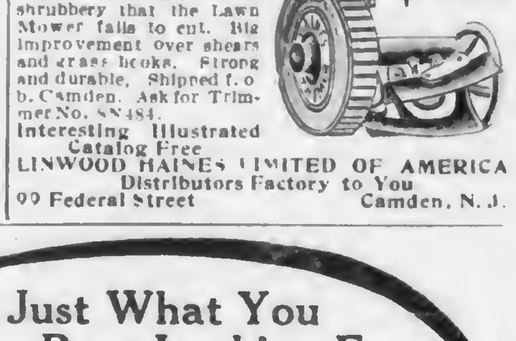
During the year the club has spent $3,205.09 for premiums at fairs and in seeing that the club was personally represented. In this manner a great deal of good has been accomplished in placing the merits of the breed before the public. Estimates for expenses for the coming year include, besides that necessary for the maintenance of the office and printing expenses, $7,500 for the work at the fairs and also for the representation of a herd at the Panama Pacific Exposition.

The following officers were elected.—President Emeritus, James M. Codman, Brookline, Mass.; President, James Logan Fisher, Philadelphia, Pa.; Vice-Presidents, Ex-Gov. W. D. Hoard, Fort Atkinson, Wis., and Ezra Michener Lumberville, Pa.; Sec. and Treas. Wm. H. Caldwell, Peterboro, N. H.

CHANGES IN DEPARTMENT OF AGRICULTURE

Dr. William T. Galloway has resigned his position as assistant secretary in the U. S. Department of Agriculture to accept the deanship of the New York State College of Agriculture in Cornell University. He is succeeded as assistant secretary by William A. Taylor, the present chief of the Bureau of Plant Industry. Mr. Taylor has been in the Department for more than 20 years, entering the service from Michigan where he was a successful fruit grower.

Worms in Pigs and Shotes.—Young and growing pigs are often unthrifty and make slow gains in weight. Often the particular breed or the feed is blamed when the real trouble is stomach or intestinal worms. Some remarkable demonstrations of this fact have followed the use of a good worm destroyer and conditioner like the well-known Sal-Vet. H. H. DeVore, Birchville, Pa., writes: "My shotes were very badly infested with worms. After feeding Sal-Vet a short time, the worms came from them in large bunches until now there are no further signs of them. During the 60 days that I have been feeding Sal-Vet most of my hogs doubled in weight and some more than doubled." Sal-Vet is sold on 60-day free trial and is equally effective on swine, sheep, horses and cattle. For full particulars address The S. R. Feil Co., Cleveland, O., saying you saw this notice in Pennsylvania Farmer.



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Something About Strawberries.

Their Dietetic Value.

First, let us inquire a little into the composition of strawberries and the purpose that they serve in human nutrition. They contain 8 to 10 percent of dry matter, which is largely sugar and malic acid. The average composition is about as follows: Water, 90.4 percent; protein, 1 percent (protein is the tissue-building substance of foods); fat, .6 percent, which consists of the essential oils which help to make the flavor; carbohydrates (fuel or energy making substances), 7.4 percent; mineral matter, .6 percent. The carbohydrates consist mainly of sugar (about 5 percent) and malic acid, about 1 percent. The sugar is nearly all what is called fruit sugar, with a very small amount of cane sugar, varying from .1 to .4 percent. Another carbohydrate constituent is "crude fiber," 1.4 percent; this consists of the cellulose or woody fiber forming the walls of the cells that contain the protein, sugar, acid, mineral matter and water.

The nutrients are the protein, comprising only 1 percent of the strawberry; sugar, 5 percent; fat, .6 percent; total 6.6 percent. The fuel value of a pound of strawberries is only 180 calories (a calorie is the amount of heat required to raise one pound of water four degrees). This fuel or energy-making power is insignificant compared with 1,620 calories in a pound of corn meal or rice, 2,840 calories in bacon, 1,576 in a beef roast, 3,555 in salt pork. As a farmer at field work needs about 3,000 calories per day, it would require 3,000 divided by 180 (the number of strawberry calories per pound), which equals 16.6 pounds of fresh strawberries per day to furnish his needed energy—manifestly impracticable.

But strawberries were made for a definite purpose in human nutrition. What is it? The large percent of water which they contain, you may suggest. Partly; it is true that probably we would not drink enough water if it were not served as palatably flavored in fruits and green vegetables, for altho not all of us would avoid water for the reason ascribed by the Southern colonel who remarked, "Watuh is ve'y fine fo' navigation, suh, but a mighty poo' drink," we would likely forget to take enough of it for irrigation of our assimilative system.

But we need the strawberry for other reasons. Its malic acid (the same as that in apples) is one of the most useful acids in human nutrition. It is an organic acid, that is, when it is burned in our bodies to produce heat and energy, just as starch, sugar and fat are burned in us for the same purpose, it is reduced to a pure white ash, all of which is needed for our assimilative processes, and so no clinkers or clogging results, as happens when we eat mineral or fat acids. Malic acid also the other fruit acids, tartaric in grapes and citric in lemons, oranges and grape fruit—is reduced in our bodies entirely to water and carbon dioxide (carbonic acid), then the carbonic acid unites with sodium, one of the mineral elements contained in strawberries, to form the ash referred to, which ash is three-fourths or more alkaline, and which thus preserves the alkalinity of our blood, and so prevents uric acid from forming and causing rheumatism or uremic poisoning. Sodium is the element which unites with chlorine to form sodium chlorid, the common alkaline mineral which we know as salt. There is also a little chlorine in strawberries—about .01 percent. Besides .07 of sodium and .01 pct. of chlorine, they also contain: Lime, .05 percent; magnesium, .03 percent; potash, .18; phosphorus, .064; iron, .0009. We have heard people say that they eat beets because they contain a good deal of iron; as a matter of fact, strawberries analyze out .0009 percent of iron as against .0006 percent for beets.

Strawberry Poisoning.—Some people apparently can not eat strawberries without having large blotches or wheals come out on their skin. Just why strawberries cause this has not been definitely determined, but since the trouble is relieved by usually taking a saline or soda laxative, may it not be suspected that it is due to the effort of the malic acid of the strawberries in combination with the sodium, as previously explained, to alkalize or counteract the overcharge of acid in the blood with the result of violent disturbance. And because the residues of ptomaines of this conflict can not be excreted thru the clogged excretory system the blood throws them out thru the skin. At any rate, correction of the acid condition of the blood and of the constipation frequently enable such people to eat strawberries without this annoyance.

Recipes

(All measurements level full).

Served with Hulls and Stems.—Select large firm berries, and lay them on a crisp crinkly leaf from head lettuce. Serve powdered sugar with them in small individual butter plates or glass salt cellars, the idea being to dip the berries into the powdered sugar.

With Orange or Pineapple.—Small strawberries can be served very attractively as a luncheon first course or as a sauce or dessert by mixing with pieces of orange and pineapple, and pouring over all some juice of the orange or pineapple, either alone or mixed. It is not usually necessary to use sugar unless the fruits are quite tart. Serve in glass sauce dishes or sherbet cups.

Batter Cups.—Mix 1 pint of sugar with 1 qt. of berries, slightly mashed. For the batter, sift ½ teaspoonful salt and 1 teaspoonful baking powder into 1 cup flour; rub well into this a tablespoonful butter, mix in 2 eggs (yolks and whites beaten separately) and ½ cup milk. Place a layer of the batter in buttered cups or molds, then a layer of the berries, and so on until the cups are two-thirds full, leaving room enough for the batter to rise. Steam or bake 45 minutes. Serve with cream (whipped if possible) or with strawberry sauce made as follows:

Strawberry Sauce.—Cream together 1 cup sugar and ½ cup butter add the whipped white of one egg and 1 cup of mashed berries. This is better if kept on ice a few hours before serving.

Muffin Rings.—Line muffin rings with thinly rolled sweetened baking-powder or sour-milk biscuit dough. Bake brown, fill with berries, sprinkle with sugar and serve with whipped or plain cream.

Float.—Bring to boiling point 1 quart of milk containing 1 cup sugar and a pinch of salt; add 1 tablespoonful corn starch dissolved in a little cold milk; cook 3 minutes, add the beaten yolks of 3 eggs, beat together for 2 minutes, then remove from the fire, and let cool. Into the juice from 1 pint of mashed berries gently fold the whipped whites of 2 eggs sweetened with 2 tablespoonfuls powdered sugar. Spread this on top of the cold custard when ready to serve, and drop on this a few prime ripe berries.

Escalloped Strawberries.—You will need ice to chill this dish. Alternate layers of strawberries with whipped cream in a glass dish, and dress with pineapple or strawberry syrup or else with the sweetened uncooked juice of either of these fruits.

Pie.—Why more people do not use fresh strawberries for pie timber is a question. They make beautiful and delicious pies, but strawberry pies need to be eaten warm to be at their best, for if they stand the juice soon soaks the crust. And the crust should be flaky and brown. To make it so, rub 2-3 cup equal parts butter and lard into 2 cups of flour into which you have sifted ½ teaspoonful salt; mix with ½ cup water—ice-cold gives best results, for all pie crust making should be kept as cold as possible. Then roll it about ½ inch thick, and dot with bits of butter, then fold and roll as thin as needed. For the filling allow 1 cup of sugar to 1 quart of berries, and use enough berries to make a "fat" pie. Add no water, for the berries are watery enough; sprinkle with flour, especially near the edges so as to soak up and make a jelly of as much of the juice as possible. Use no spices—it is the pure strawberry flavor that you want. Dot with bits of butter, about 1 level tablespoonful per pie. Turn the crust edge in toward the center and pinch together; thus turning toward the center prevents the juice from boiling out at the joining of the two crusts.

Sherbet.—Is made by adding to partly frozen ice the beaten whites of one or two eggs.

To Can So As To Preserve Plumpness.—Allow 1 quart of sugar to 6 quarts of berries. Crush 1 quart of the berries and strain out the juice, and make a syrup of this and the sugar. Put the rest of the berries into glass cans, fill the cans with the syrup, lay on the rubbers and covers loosely, set the cans in a 2-inch deep water bath in your wash boiler, cover, bring to boil and boil 10 minutes. Then remove from the boiler, tighten the covers, and stand the cans on their tops until next day to make sure that they are tightly sealed.

Strawberry Jelly.—Strawberry juice does not jelly readily alone, because there is not much pectin or jelly-making substance in it, therefore we use a little gelatin or else currant or tart apple juice—in proportion of about one-fifth. Crush the berries to start the juice, and cook until the juice is well extracted, adding no water. Strain thru cheesecloth, or if a very clear jelly is desired thru flannel. One really ought to use a syrup gauge for determining the amount of sugar to use, because the same fruits vary in their sugar content and unvarying success with jellying depends on using the right amount. The syrup gauge should register 25 for jellies. The usual rule is 1 pint of sugar per pint of juice, but sometimes in this way we get our jelly too sugary or not sugared enough. Boiling too long darkens and toughens jelly and boiling too furiously may crystallize it.—Harriet Mason.

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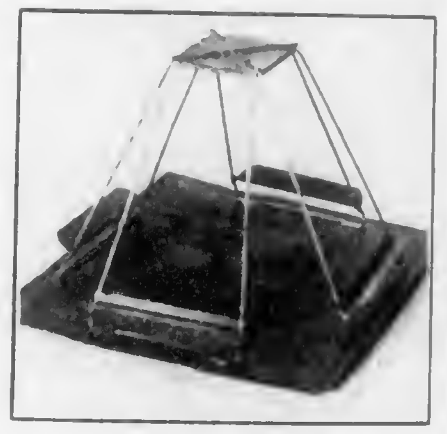
A COLLAPSIBLE TOASTER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This toaster can be used on any kind of a stove. Four slices of bread can be toasted at one time. The finished toast is positively free from all foreign and disagreeable tastes, as the bread never comes directly in contact with the flame. Tea or coffee may be prepared on the top of the toaster without interfering with the toasting. Four slices of bread can be toasted in two minutes. The outside of the slice is toasted evenly from edge to edge—a delicious golden brown. While the outside is crisp and snappy, the inside of the slice is as soft and palatable as a freshly baked biscuit.—Housekeeper

CLOSETS AND SLEEPING PORCHES

"Let me plan for the closets and you may arrange the rest," remarked a young housekeeper during an animated discussion of the arrangement of a convenient house. They are indispensable conveniences, from the fruit closet or cupboard in the basement to the linen closet opening into the hall on the second floor. How our grandmothers managed with none, or perhaps just one in some out of the way place, and still kept sweet and sunny, is an unsolved mystery.

But there is another feature of the up-to-date home that is fully as important, as regards health and comfort, as the closets, and that is the sleeping porch or room that can be practically thrown open on at least three sides where the pure air is not shut out day or night. American people are becoming impressed with the pure air idea as rapidly as writers, lecturers and instructors can bring its importance before them, or the necessity awakens them to the fact that it is a preventive of disease, and is very often a cure. So it is becoming more and more general to plan for one or more open-air bedrooms when building a new house, or convert verandas and porches of older residences into comfortable and healthful sleeping quarters, to be used the whole year around.

As yet the benefits of sleeping in the open air seem to be appreciated principally by those living in towns or cities, but why should not farmers and their families be equally given to the habit. The great comfort and pleasure derived from sleeping out of doors, especially during the summer, well screened from mosquitoes and flies, where sweet winds may blow at will, bringing dreamless sleep and real rest to the tired muscles, must be experienced to be appreciated. And to be able to go out each morning, strong to meet the battles of the day, instead of being tired out from having tossed half the night because of the heat, will alone be worth many times the actual outlay in dollars and cents that such a porch or room will cost.

The smallness of the house need be no hindrance, as the open gable end of the attic of the tiny cottage is as available for the purpose as is the commodious porch of the more pretentious dwelling. A tent is a fair substitute, but one is apt to discard it and move into the house on the approach of cold weather, and snuggle up in artificially heated rooms and invite colds and all attendant evils.—Glentworth Rubins.

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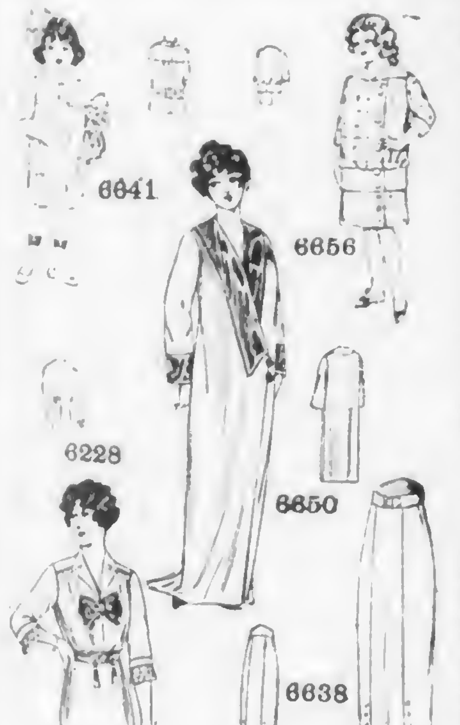
6656.—Girls' Dress.—Cut in sizes 4 to 11 years. Age 8 years requires 3 yards of 36-inch material. Price, 10 cents.

6650.—Ladies' Kimono.—Cut in sizes small, medium and large. Medium size requires 5½ yards of 40-inch material and 1¼ yards of 27-inch satin to trim. Price, 10 cents.



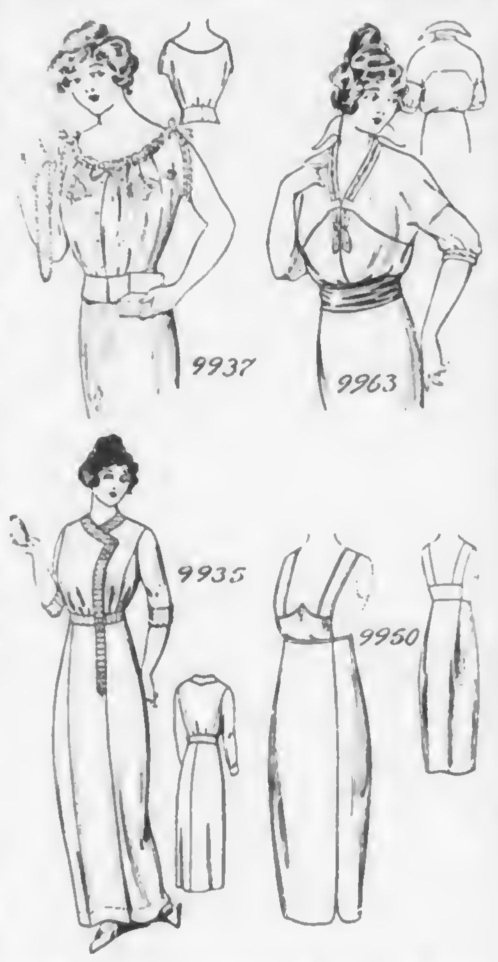
6228.—Ladies' Shirt Waist.—Cut in sizes 34 to 42 inches, bust measure. Size 36 requires 2 yards of 44-inch material and 1½ yards of edging. Price, 10 cents.

6638.—Ladies' Four-Gored Skirt.—Cut in sizes 22 to 32 inches, waist measure. Size 22 requires 2¼ yards of 36, 44 or 54-inch material. Price, 10 cents.

9937.—Ladies' Corset Cover with Peplum.—Cut in 7 sizes: 32, 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 2 yards of 27-inch material for a 36-inch size. Price of pattern, 10 cents.

9963.—Ladies' Blouse Waist.—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 2¼ yards of 36-inch material for a 38-inch size. Price, 10 cents.

9935.—Ladies' House Dress.—Cut in 7 sizes: 32, 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 5 yards of 44-inch material for a 36-inch size. The skirt measures about 1¾ yards at the foot. Price, 10 cents.



9950.—Ladies' One Piece Suspender Skirt with Bib Portions.—Cut in sizes: 22, 24, 26, 28, 30 and 32 inches, waist measure. It requires 3 yards of 44-inch material for a 24-inch size, which measures about 1¼ yards at the foot. Price, 10 cents.

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MR. PRATT

By JOSEPH C. LINCOLN

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SYNOPSIS OF PREVIOUS CHAPTERS

Two New York business men, Van Brunt and Hartley, come to Wellmouth for a vacation. Solomon Pratt, Skipper and village character, finds the ''twins,'' as they are dubbed, interesting but takes them for lunatics and their ''man'' for their ''keeper.'' The ''twins'' after harrowing experiences with cooks, ask Pratt to find them a secluded place of rest and act as their cook. The skipper and Hartley witness a greased pig race, rescue a fresh air youngster hurt in the race, Hartley meets a former friend in a fresh air worker, and the skipper has a troublesome voyage back to Wellmouth in which he is set adrift in a skiff and Van Brunt and his ''man'' in the ''Dora Bassett.''

CHAPTER VI (continued)

So I squared my shoulders and laid to the oars, heading for where, judging by the wind, the land ought to be. 'Twas darker than a black kitten in a nigger's pocket, but I cal'lated to be able to hit the broadside of the United States somewhere. I got aground on the flats five or six times, but along towards midnight I butted ashore at the little end of nowhere where there was nothing but bushes and sand and pines, no sign of civilization. And by this time 'twas pouring rain.

After a couple of years of scratching and swearing and falling down I come out of the scrub into a kind of clearing. Then I discovered a barbed wire fence by hanging up on it like a sheet on a line and located the back of a barn by banging into it with my head. Then a nice talkative dog come out of the barn and located me, and things commenced to liven up.

While me and the dog was conducting our experience meeting a light showed in an upstairs window a little ways off and somebody sticks their head out and wants to know what's the matter.

''Who are you?'' he says.

''My name's Pratt,'' says I.

''Where are you?''

''Well,'' I says, ''judging by the feel and smell I'm on the top of the pigsty. But I ain't real sure. I can tell you where your dog is, if you want to know.''

''What are you doing round here this time of night?'' he says.

I told him as well as I could. The dog was having a conniption fit, trying to bark itself inside out, and I had to say things over three or four times so's a body could hear. But the feller at the window wa'n't satisfied even then. I never see such a wooden-head.

''What Pratt did you say you was?'' he hollers.

I told him my name and where I hailed from.

''Sol Pratt!'' says he. ''Of Wellmouth? What are you doing way over here?''

''Blast it all!'' I yells. ''If I wa'n't half drowned already I should say I was getting wet. Turn out and let a feller into the kitchen or somewheres, won't you? And tie up this everlasting dog.''

That seemed to wake him up some and in ten minutes or so he comes poking out with a lantern. I knew him then. 'Twas Ebenezer Holbrook, Huldy Ann Scudder's sister's husband, who lives over in the woods on the line between South Eastwich and West Ostable. There was another man with him and blest if it didn't turn out to be Nate Scudder himself. Him and Huldy was visiting over there, same as he said they was going to.

Nate had more than a million questions to ask. Ebenezer tied up the dog—the critter pretty nigh broke down and sobbed when he found I wa'n't to be fed to him—and we went into the kitchen. Then Mrs. Holbrook and Huldy Ann rigged up tasty and becoming in curl papers and bedquilts, floated downstairs and there was more questions.

When Nate found out that one of his lodgers was cast adrift in the bay he was almost as worried and upset as I was. But Ebenezer agreed with us that there was a good chance of the sloop's getting ashore safe. He said why didn't I turn in on his setting-room lounge for the few hours between then and sun-up, and in the morning me and Nate could take his yawl dory and cruise alongshore and hunt. So I done it, tho 'twas precious little sleep I got.

About six o'clock we started. I thought first I'd go up to Eastwich village and telegraph to Hartley. Then I thought I'd better not; no use to scare him till I had to. Nate had heard about the pig chase and Hartley's doings over there and he pestered the life out of me with questions about that.

''Queer that boy should turn out to be his brother, wa'n't it?'' he says.

''Whose brother?'' says I, leaning out over the yawl's side and watching for signs of the Dora Bassett.

''Why, Hartley's,'' says he.

''Brother!'' says I. '' 'Twan't his brother. No relation to him.''

''I heard different,'' he says. ''I heard 'twas his brother, name of Oscar Dennis. And that woman from the school was his brother's wife. Some says she ain't living with her husband and some say Hartley's right name is Dennis and that she's his wife and he was down here hiding from her. Seems when that boy first dove into the crowd 'twas because he'd seen Hartley. They say that when that woman and this Hartley [illegible], she sings out, 'My God! my husband!' That's what some says she said, and others says——''

''She never said no such thing,'' I says. ''She wouldn't swear if he was her husband four times over; she ain't that kind. And she ain't his wife nor his sister nor his sister-in-law nor his grandmother's cat's aunt, neither. She's no relation to him and neither's the boy. Who's been giving you all this rigmarole?''

It seems he'd heard it from a feller that lived next door to Ebenezer; and the feller had heard it from somebody else that had got it from somebody else and so on and so on and so on. Nigh's I could find out it had started from Hartley's telling me that the boy was a ''brother outcast.'' Some idiot with poor ears and worse brains had thought he said ''brother Oscar,'' and the whole string of yarns had sprouted from that. Shows you what good soil there is for planting lies down our way. If lies was fetching ten cents a barrel the whole neighborhood would have been rich years ago.

All the time me and Nate was powwowing this way the yawl was sailing up the bay towing my skiff behind her. There was a nice fair wind and a smooth sea and 'twas so clear after the rain, that we could see the hills across the bay. But no sign could we see of the Dora Bassett nor her passengers. I was getting more worried every minute.

We cruised along till we got abreast of the point from where the Old Home pier was in sight. But the sloop wa'n't at the pier. No use going any farther, so we come about and begun to beat back again the way we'd come. Scudder was worried too, but his worriment had caught him in the pocketbook; proves how disease will always get hold of a feller's tenderest place.

''Look here ,Sol,'' says he; ''do you cal'late Hartley'll want to stay to my house if his chum's drowned?''

''Well now, he agreed to take it for a month and there's five days to run yet. Ain't he liable for them days?'' he says.

I was feeling just mean enough to want somebody else to feel that way, so I answers,

''Well, you can't hold a lunatic, 'cording to law. And you and Huldy Ann have agreed that he's crazy.''

He thumped the boat's rail. ''Crazy or not,'' says he, ''I can't afford to lose them days. I shan't give him back none of his money.'' Then he thought a minute and begun to see a speck of comfort. ''Maybe the shock of t'other feller's drowning'll make him sick,'' he says. ''Then he'll have to stay longer than the month.''

Trust Nate Scudder to see a silver lining to any cloud—and then rip out the lining and put it in his pocket.

By this time we was beating in towards where the Neck Road comes down to the beach. And there on the shore was a feller hailing us. And when we got close in it turned out to be Hartley himself.

He was glad enough to see me, but when he found that Van and Lord James had turned up missing he was in a state. He'd been kind of scared when we didn't come back during the night and had walked down to the beach in the morning to see if he could sight us.

We headed off shore again. Nate watched Hartley pretty close and I suppose when he seen that the Twin didn't show any symptoms of getting sick, he begun to worry again. He got out a piece of pencil and an old envelope and commenced to figure.

''Mr. Hartley,'' says he, after awhile; ''about them lady friends of yours over to Eastwich. Do you cal'late they're going to like where they are? Seems to me a place that's as easy to run away from as that ain't the best place for a boy's school. If they was on an island now, the scholars couldn't run off. I know a nice island they could have cheap. Fact is, I own it—that is, Huldy owns it; it's [illegible] her name. That's it over there.''

Hartley didn't answer. I looked where Nate was pointing.

''Oh!'' says I. ''Horsefoot Bar. That's a healthy place for a school. Might do for a reform school maybe, if you wa'n't particular how the reforming was done.''

Horsefoot Bar is a little island about five mile from the Old Home House, a mile and a half from the mainland, and two foot from the jumping off place. By the help of Providence, decent weather, a horse, two whips, and a boat, you can make it from Wellmouth depot in three hours. And when you have made it, you can set in the sand and hang on to your hat and listen to the lonesomeness. I'd forgot that Scudder owned it. When him and I had sailed up that morning we'd passed it on the outside; now we was between it and the beach.

''It's a nice dry place,'' says Nate, arguing, ''and you might live there forever and nobody could run away.''

''Humph!'' says I, thinking of something I'd seen in a newspaper; ''Hell's got all them recommendations.''

Hartley was looking at the Bar now. All to once he grabbed me by the arm and pointed.

''Sol,'' he says, ''what's that sticking up over the point there? There, behind those trees? Isn't it a boat's mast?''

I looked, and looked once more. From where we was you could see a part of Horsefoot Bar that was out of sight from the rest of the bay. As I say, I looked. Then I gave the tiller a shove that brought the boom across with a slat. It took Nate's hat with it and cracked him on the bald spot like thumping a ripe watermelon. Nate grabbed for the hat and I drove the yawl for Horsefoot Bar. I'd spied the Dora Bassett's mast over the sandspit.

In a jiffy we see her plain. She was lying on her side in a little cove, just as the tide had left her. Her canvas was down in a heap, partly on deck and partly overboard, but she didn't seem to be hurt none. I beached the yawl just alongside of her, dropped the sail, chucked over the anchor and jumped over myself. Hartley and Scudder followed. We was yelling like loons.

Up thru the bunch of scrub pines we tore, still hollering. And then, from away off ahead somewheres, come the answer. I was so tickled I could have stood on my head.

In a minute here comes Lord James to meet us. His Lordship looked yellow and faded, like a wilted sunflower, and his whiskers seemed to be running to seed. But his dignity was on deck all right.

''Mr. 'Artley,'' says he, touching what was left of his hat; '' 'ope you 're well, sir.''

''Where's Van?'' asked Hartley brisk.

''Mr. Van Brunt, sir? Up at the 'ouse, waiting for you, sir.''

''The house?'' says Hartley.

''The house?'' says I. Then I remembered.

There is a house on Horsefoot Bar. It was built by old man Marcellus Berry, and in Marcellus's day they built houses, didn't stick 'em together with wall paper and a mortgage, like they do now. Consequence is that, tho the winter weather on Horsefoot made Marcellus lay down a considerable spell ago, his house still stands, as pert and sassy an old gable-ended jail as ever was. The house was there, and Scudder owned it. Likewise he owned the sheds and barn in back, and the sickly bunch of scrub pines, and the beach plum bushes, and the beach grass and the poverty grass, and the world-without-end of sand that all these things was stuck up in. As for the live stock that was seven thousand hop-toads, twenty million sand fleas, and greenheads and mosquitoes forever and ever amen.

We fell into the valet's wake and waded turu the sand hummocks up to the house. And there on the piazza, sitting in a busted cane-seat chair with his feet cocked up on the railing and the regulation cigar in his mouth, was Van Brunt, kind of damp and wrinkled so far as clothes went, but otherwise as serene and chipper a Robinson Crusoe as the average man is likely to strike in one life time.

Wa'n't we glad to see him! And he was just as glad to see us.

''Hello, skipper,'' says he, reaching out his hand. ''So you got ashore all right. Good enough. I was a bit fearful for you after you left us last night.''

''Humph!'' says I. ''I had a notion that 'twas you that did the leaving. Talk about dropping an acquaintance! I never was dropped like that afore. Look here, Mr. Van Brunt, afore you and me go to sea together again we'll have a little lesson in running rigging. I want to learn you what a mainsheet is.''

''Oh,'' he says, careless like, ''I guess I found it, after a while. At any rate if it's a rope I cut it. I cut all the ropes in sight.''

To be continued.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 1, 1914.

Butter of fine quality ruled firm with demand equal to the limited offerings. Eggs sold fairly well and ruled steady with supplies of desirable stock well under control. Poultry supplies were rather low and prices ruled firm under the scarcity. Fruit and vegetables were moderately active.

Butter.—Western creamery, 28c; extras, 26c; firsts to seconds, 22@25c; special prints 3[illegible]@35c; near-by prints 29c.

Eggs.—Candled 24@26c dozen; extras, 23c. Current receipts at $6.15 per standard case.

Poultry.—Fowls, 17@18c; old roosters 11@12c; chickens 32@35c; pigeons, young, 18@22c.

Dressed Poultry.—Western fowls 13@18c; roosters, 12c; squabs, $2.00@4.50 per doz.

Vegetables.—White potatoes, Pa., new, 80c @$1 bbl.; onions, new $2.50@2.75 per carrier; peppers $2.00@2.25 per carrier; eggplant, $2.00@3.00 per crate; lettuce, 4@5c head; beets 2@4c per bunch; sweet potatoes 40@55c bas.; string beans 75c@$1.50 hamper; squash 75c@$1 per hamper; cucumbers, 75c@$1 per basket; celery 75c@$1 per bunch; cabbage, new 75c@$1.25 per crate; asparagus 5@15c per bunch; radishes, [illegible] bunch; carrots 2@4c bunch; mushrooms [illegible] per lb.; peas, $1.00@1.25 per basket; spinach 50c@$1.00 per bbl.

Fruits.—Apples $2.00@5.00 per bbl. Pineapples crate $2.00@3.00; lemons $3@5 per box; grape fruit $2.00@4.00 per box; oranges $2@4 per box; strawberries, 6@12c per quart.

Hay and Grain.—No. 1 hay, large bales, [illegible]; No. 1 medium $18@18.50; No. [illegible] Clover mixed hay, light mixed at $17.00@17.50; straw No. 1 straight rye, $16.00@16.50; No. 2 do., $1[illegible]@17.50; No. 1 tangled rye straw new $12.50@13; No. 2 do., $11.50@12; No. 1, wheat straw, $10@10.50; No. 1 oat straw, $10@11.00; corn No. 2 yellow, 80½c; [illegible] wheat, No. 2 red $1.01@1.01½; No. 1 Northern $1.03½@1.04½; No. 2 white oats, 47@47½c; No. 3 white 45½@46c; standard white, 46½@47c.

Feed.—Winter bran, in 100-pound sacks per ton, $28.00@28.50; spring bran, in 100-pound sacks, per ton, $27.00@27.50.

Coffee.—Rio 7s 8⅞c; Santos 4s 11⅝c. Mild Coffee.—Cordova 12½@16c.

Sugar.—Cut loaf $5.15 cwt.; cubes, $4.45; powdered, $4.35; granulated, $4.20; standard granulated, $4.25; Crystal A, $4.10.

Provisions.—City beef, in sets, smoked and air dried 31@31½c. Hams cured, 13⅝@14c; skinned 14@14⅞c; smoked 17@18c. Other hams, smoked, city cured, as to brand, 17@18c. Picnic shoulders, 10¾@10⅝c, do smoked, 13@13½c. Bellies in pickle, 13½@14¾c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 11¼@11⅞c tcs; do in tubs 11¾@12c; do kettle rendered, 11¼@11¾c. Tallow, prime city 6⅝c; country, 6⅝c; do. dark, 5⅝c; do. cakes, 6⅞c.

Philadelphia Retail

Vegetables.—Onions 25c ½-pk. Peppers [illegible] doz.; eggplants 10@25c apiece; cabbage 5@10c head; lettuce 5@10c, beets [illegible] 3 for 25c. Sweet potatoes, 18c [illegible]-pk. White potatoes, new, $1.25 bu.; string beans [illegible] ¼-pk. tomatoes, 50@60c bas; [illegible] apiece, cauliflower 10@25c apiece; mushrooms [illegible] lb.; asparagus, [illegible] bunch; cucumbers, 3@10c apiece; celery [illegible] bunches, radishes, 2 bchs for [illegible] bch; peas, 50c per ½-pk.

Fruit.—Apples 20c per ¼-pk; pineapples [illegible]; grapefruit 3 for 25c; oranges [illegible] per dozen lemons, 20c per dozen; strawberries, 15@25c per quart.

NEW YORK PRODUCE

New York City, June 1, 1914.

The New York wholesale market butter [illegible] firm while poultry was steady. [illegible] were fluctuating.

Eggs.—Fresh gathered firsts to extras [illegible]; seconds to thirds, 17½@19c; [illegible] 1[illegible]@18c; mixed 19½@22c.

Butter.—Creamery firsts to extras 26½@27½c; [illegible] to seconds 21@24c; state dairy 1[illegible]@25c; packing stock 17@17½c.

Cheese.—Whole milk specials, 14@[illegible]; common to fancy, 13½@13¾c; skims [illegible] 10c.

Dressed Poultry.—Turkeys, dry, 25@26c; broilers 30@36c lb; fowls, 13@19c; old roosters 13c; ducks, 8@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage, 75c@$1.50 crate; [illegible] 25c@$1 bas.; carrots, $2@3 per 100 bchs; cucumbers 75c@$2.50 bas; lettuce [illegible] $1 bas; squash 50@75c basket; celery [illegible] standard crt.; onions $3.00@[illegible] 100-lb bag; tomatoes, $1.50@2.75 per carrier; peppers $1.50@2.50 box; beets [illegible]@5.00 per 100 bchs; potatoes, $2[illegible] bbl; sweet potatoes, 75c@$1.25 [illegible], $1@2.50 bx; asparagus 50c@$2 [illegible] per doz. bunches; radishes, 50@75c per 100 bunches; rhubarb, 75c@$1.25 per 100 bunches.

Fruit.—Apples, $2@6 bbl, grapefruit $1@4 per box; oranges, $1.50@4.50 per box; strawberries, 5@12c per quart.

Grain.—Wheat No. 2 red 94c. No. 1 Northern, $1.03; corn, No. 2 yellow, 80¼c. Oats, standard white, 46½@47c.

BALTIMORE PRODUCE

Baltimore, Md., June 1, 1914.

[illegible] Baltimore wholesale market butter and eggs were steady. Poultry was quiet.

Butter.—Creamery, fancy 27@27½c; do [illegible] 26c; prints, 27@29c; blocks, 26@28c; Maryland and Penna. rolls, 18@19c; [illegible] 22c.

Eggs.—Near-by firsts, 19c; western 19c; southern [illegible].

Live Poultry.—Hens, 16c, chickens [illegible]; old roosters, 11c; ducks, 12@13c.

Vegetables.—Potatoes, Maryland and Pa., [illegible]; new, $2.00@4.00 per bbl; beets [illegible]; beans, green $1.50@1.75 per bas; [illegible] 50c@$1.00 per basket; lettuce, [illegible]@75c per basket; tomatoes, $2.25@2.50 per carrier; [illegible] 75c@$1 per 100 bunches; eggplants $3@3.50 per crate; cabbage, 60@[illegible] per crate; radishes, 50c@$1 per 100; rhubarb, 1½@2c bunch.

Fruit.—Apples, $4.00@5.00 bbl. Grapefruit $2.50@4.00 per box. Oranges $2.50@3.00 per box; strawberries, 5@12c per qt.

Grain.—Wheat No. 2 red western $1.01; spot, $1.01; corn, yellow, new, 81@81½c; oats, standard white, 46c; No. 3 white 45½c; rye 60@76c.

Hay & Straw.—Timothy No.1, $18.50@19; No. 2 timothy $17.00@17.50; do. No. 3 $11.50@16.00. No. 1, clover $16.50@17.00; No. 2, do., $14.00@15.50; No. 1, tangled rye straw, $11.50@12; No. 1 oat straw $11.50@12.00; No. 1 wheat straw, $7.50@8.00.

Mill Feed.—Spring bran $27.50@28. Middlings, flour to white $29@31; western middlings, $27.50@28.00; city mills, middlings, $28.00@28.50.

WASHINGTON PRODUCE

Washington, D. C., June 1, 1914.

Eggs.—Per dozen, 20@21c.

Live Poultry.—Hens, per pound, 15@16c; roosters, 11c; spring chickens 33@35c.

Vegetables.—Potatoes, new $1@4.50 per bbl; onions $2.00@2.75 crt; lettuce per bas., 35@50c; peppers, $1.50@2.50 per crate; eggplant, $2@3.25 crate; beets, new, 3 cents per bunch; carrots 1@2c per bch; cabbage 50c@$1 per crt; cucumbers $1@1.75 bas; sweet potatoes $1.00@2.00 per bbl; celery, doz., $1.75@2.25; tomatoes $1@1.75 crate; asparagus 75c@1.50 per doz. bchs; peas, $1.00@1.75 basket; lima beans $4.50@5.00 crate; radishes, $2.00@3.00 per 100; rhubarb 2@2½c bunch.

Fruit.—Apples, $4@6.50 per bbl. Pineapples, $2.25@2.75 per crate; grapefruit, $3.00@4.00 per crate; lemons, $2.75@3.50 per box; oranges, $3.00@3.50 per box; strawberries 6@12½c quart.

WILMINGTON PRODUCE

Wilmington, Del., June 1, 1914.

Butter.—Print butter, 35@40c lb. Creamery roll, 40c.

Poultry.—Chickens, dressed, 18@20c; broilers, 25c.

Eggs.—Fresh, 23@24c; storage, 20c.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk; cabbage, new, 5@15c; sweet potatoes 40@50c; onions 20@25c ¼-pk; new 20c qt. Eggplants 10@15c ea. Peppers 20@40c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch; string beans, 20c ¼-pk; peas, 25c ¼-pk; spinach 10c ¼-pk; asparagus, 35@40c bunch; tomatoes, 15@20c quart; squash, 10c each; kale, 6c ¼-pk; parsnips, 5c bunch; cucumbers, 10@12c each; turnips, 5c ¼-pk; radishes, 5c bunch.

Fruit.—Apples, 15@25c ¼-pk. Pineapples 20@25c apiece. Oranges, California 20@30c doz. Florida, 35@40c doz. Bananas, 10@15c doz. Grapefruit, 7@10c each; strawberries 40@50c box; lemons 12@15c doz.

YORK PRODUCE MARKET

York, Pa., June 1, 1914.

Saturday being a holiday the markets were all crowded into four days and this made the crowds immense. Friday's markets were like a vast flower garden, stands piled high with all sorts from the choicest hot-house flowers to the plain blooms found in the wood. County strawberries were in evidence, a few early in the week, and more plentiful on Friday. Very common ones at 10@12c while some sold four and five crates at 18@25c per box. Cherries were on sale in a limited quantity.

Eggs.—19@20c doz.

Butter.—Country, 25@30c, separator, 32@35c. Milk, [illegible] quart. Cream, 10@12c per pint.

Poultry.—Hens, 15@16c, springers, 20c. Dressed poultry 45@90c each.

Vegetables.—Potatoes 10@18c ½-pk; 75c@$1.25 bu; cabbage 3@8c each; lettuce, 2@5c; beets, 3@5c bch; radishes 3@5c bch; onions 2@3c bunch, 15c ½-pk; lima beans, 14@16c qt.; sweet potatoes, 14@16c ½-pk; lard 14@16c lb.; celery 5@10c ea; peppers, 8@12c doz; turnips 10c per ½-pk; sauer kraut 8c qt. apple butter, 20@25c qt. asparagus, 5@8c bch, rhubarb, 3@5c per bunch.

Fruit.—Apples, 25@35c ½-pk; strawberries, County, 12@25c; southern, 6@12c, cherries, 10@12c per box.

Retail Grain Market.—Wheat, $1.06 bu corn, 88c [illegible], 56c; rye, 77c; bran, $1.60 cwt; [illegible], $1.70 cwt.

Wholesale Grain Market.—Wheat, 96c corn, 78c, oats, 40c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 1, 1914.

Beef Cattle.—The market closed quiet and steady with the holiday conditions, with demand principally for actual necessities. There was a limited run of cattle, mostly of Pennsylvania and Kentucky brands. Cows and calves sold slowly at the prevailing rates.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	[illegible]	7,136	4,969
Previous week	[illegible]	12,626	5,245

Best steers	$8.85@9.00
Choice steers	8.60@8.75
Good do	8.25@8.50
Medium steers	7.50@8.00
Common steers	7.00@7.25
Bulls	6.25@7.75
Fat cows	5.00@7.00
Thin cows	2.75@4.00
Milk cows	45.00@85.00

Veal calves [illegible]

Best calves	$10.50@11.00
Good to choice do	9.50@10.00
Medium	8.00@9.00
Common do	6.00@7.00

Sheep and Lambs.—Holdings showed a sharp reduction and while the market was not specially active values were materially unchanged.

Choice wethers	$5.50@5.75
Good do	5.25@5.50
Common to medium	3.00@5.00
Ewes fat	4.50@5.00
Extra lambs	8.00@8.25
Good to choice do	7.00@7.50
Common to medium	5.00@6.50
Early spring lambs	9.50@10.00

Hogs.—Conditions were fairly steady with stock moving out in normal numbers. Western, $12.00@12.25.

City Dressed Stock.—Every variety of choice and prime meat commanded steady prices, under seasonable demand. Steers 12@14c; heifers, 10½@13c; cows, 9@11c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 11@12c; extra wethers, 13c. Spring lambs 15@16c. Hogs, 12¼@12½c.

NEW YORK LIVE STOCK

New York City, June 1, 1914.

Beef Cattle.—Receipts today, 2,300 head. Market irregular.

Steers	$6.75@9.25
Bulls	5.50@7.65
Cows	3.50@6.75

Calf receipts 6,000 head. Market higher.

Choice	$8.00@11.00
Culls	5.50@8.00

Dressed calves lower. Dressed veals 14@16½c.

Sheep and lamb receipts 11,700 head. Market lower.

Sheep	$3.75@5.00
Culls	2.50@3.50
Lambs	5.75@7.75
Spring lambs	8.50@9.85

Hog receipts 7,600 head. Market lower.

Choice	$8.50@8.70
Roughs	7.25@7.50

BALTIMORE LIVE STOCK

Baltimore, Md., June 1, 1914.

Cattle.—Receipts for the week were 1,715 head against 1,499 last week.

Steers	$6.25@8.50
Heifers	5.50@7.50
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh cows	32.50@70.00

Sheep and Lambs.—Receipts for the week were 7,719 head against 5,149 last week. Liberal supply, market lower.

Sheep	$2.50@5.50
Spring lambs	8.00@9.50

Hogs.—Receipts for the week were 10,111 head against 12,399 last week.

Light Western	$8.85@8.90
Heavy to medium	8.60@8.75
Near-by	8.60@8.75
Pigs	8.25@8.75
Roughs	7.00@7.75

Calves.—Receipts for the week were 632 head against 489 head last week. Light supply, market lower at $6.00@9.50.

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., June 1, 1914.

Hay.—The extremely light receipts to this market still continue while billings in transit have fallen off. Inquiries are coming in from the outside districts around Pittsburgh for hay and it looks as if it would be a strong market for the balance of the crop. Shipments should be made at once to take advantage of present conditions.

No. 1 timothy	$18.50@19.00
No. 2 timothy	16.00@17.00
No. 1 light mixed	16.00@17.00
No. 1 clover mixed	15.00@15.50
No. 2 clover mixed	12.00@13.00
No. 1 clover	15.00@15.50
No. 2 clover	10.00@12.00

Straw.—Receipts of straw light with fair demand in evidence, prices ruling steady.

No. 1 Oats	$9.75@10.00
No. 2 Oats	9.50@9.75
No. 1 Wheat	9.75@10.00
No. 2 Wheat	9.25@9.50
No. 1 Rye	10.75@11.00
No. 2 Rye	9.75@10.25

Ear Corn.—The excellent demand which ear corn has had right along has fallen off with receipts normal, market slightly easier.

No. 2 Yellow	82½@83c.
No. 3 Yellow	79@80½c.
No. 1 High mixed	81@82c.
No. 2 Mixed	79@80c.

Oats.—Receipts quite liberal while the demand is only fair.

No. 2 white	44¼@44¾c.
Standard oats	43¾@44¼c.
No. 3 white	42¾@43¼c.
No 1 white	41¾@42¼c.

VISIBLE GRAIN SUUPLY

New York City, June 1, 1914.

Following are the changes in the visible grain supply of grain in the United States:

Wheat decreased 1,[illegible] bushels; in bond increased 428,000 bushels.

Corn increased 323,000 bushels.

Oats decreased 96,000 bushels; in bond decreased 53,000 bushels.

Rye increased 6,000 bushels.

Barley decreased 170,000 bushels; in bond decreased 65,000 bushels.

NEW YORK HAY MARKET

New York City, June 1, 1914.

The market for hay is generally steady in all positions. There is a fair demand for the better grades, receipts Saturday were [illegible]22 tons. Prime timothy $1.15 bale; No. 1, $1.10@1.12½. No. 2 do., $1.05@1.10; No. 3, 95c@$1.00; clover, 82½@$1.05.

The straw market remains steady. Receipts 20 tons. Oats straw 50@60c; rye straw 65c.

NEW YORK MILK MARKET

New York City, June 1, 1914.

Never before at this period of the year has so much milk and cream entered the New York market in the course of a week as did last week. The total shows how the business is growing from year to year. Business was good altho it fell off a little at the end of the week owing to the holidays.

The receipts of milk and cream in 40-quart cans for the week ending May 30, was as follows:

Railroad	Milk	Cream
Erie	52,458	4,664
Susquehanna	8,708	508
West Shore	16,146	2,170
Lackawanna	62,750	3,675
N. Y. Central long haul	91,945	3,972
N. Y. Central short haul	13,750	190
Ontario	17,61[illegible]	5,778
Lehigh Valley	39,393	3,738
Homer Ramsdell Line	2,977	60
New Haven	8,75[illegible]	140
Pennsylvania	8,801	557
Other sources	1,750	30
Totals	355,037	25,177

ELGIN BUTTER QUOTATION

Elgin, Ill., June 1, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 26¼c.

NEW BULLETINS

Poultry House Construction.—What should prove a very valuable work to poultrymen is Farmer's Bulletin No. 574 of the Department of Agriculture, put out under this heading. The main features in poultry house construction are explained and pictures and plans of satisfactory houses are shown. Every poultryman contemplating the erection of new poultry buildings should secure a copy of this bulletin which is sent free upon application to Washington.

Diversified Poultry Farming.—Under this title the New Jersey Experiment Station at New Brunswick, N. J., puts out its circular No. 32, which is a discussion of poultry possibilities in N. J., with an attempt to give helpful suggestions and cautions. Among other statements we read, ''It is a very easy matter to get a few hens and make a dollar or two or even three dollars a year profit on each hen. To secure these same results with large flocks has been the aim of all anxious beginners. It has never yet been accomplished by trying to do several years' work in one.'' Many practical bits of advice are contained in the bulletin.

The Tuberculin Tests For Tuberculosis In Cattle.—For those interested in a short concise treatise on the Tuberculin Test for Cattle Special Bulletin No. 62 of the Michigan Agricultural College will be of interest. It deals with the preparation of tuberculin, method of injection and interpretation of results. The bulletin is mailed from East Lansing, Michigan.

A System Of Farm Cost Accounting.—Farmers' Bulletin No. 572 of the U. S. Department of Agriculture, Washington, D. C., is an attempt to supply a simple system of farm accounting for those who desire to keep such accounts and have not worked out a system for themselves, and also for those who are not satisfied with the results obtained with present methods. The bulletin outlines the requisites for farm records and then explains different forms which are included in the system in question. It is explained that ''the system outlined is not a theoretical system, but one which for several years with many types of farming and under widely different conditions, has given satisfaction.''

Water Supply, Plumbing And Sewage Disposal For Country Homes.—Any farmer who feels that the sanitary arrangements in his home are not entirely satisfactory is urged to apply for the Department of Agriculture's new free bulletin. With the help of a reliable plumber or sanitary engineer he will be able to work out a simple and economical solution for his problem. The bulletin is No 572 and is mailed from Washington, D. C.

NEW BOOKS RECEIVED

Play and Recreation.—By Henry S. Curtis, former secretary and vice president of the Playgrounds Association of America. 265 pages, 5½x8 inches. Illustrated. Bound in cloth. Published by Ginn and Co., Boston. Price, $1.10.

The truth of the old adage ''All work and no play makes Jack a dull boy'' is so generally recognized that it needs no further demonstration. But even where the need of more and better play is felt, it is often a serious problem how and what to play or how and what to provide for youths of the community to stimulate full and well balanced development. This book is an attempt to show some ways in which the adventure, romance and social co-operation which the country had in the days of the pioneer can be brought back to country life. It suggests ways of organization of recreation in the rural home, in the rural school and in the rural community. Parents, teachers and all others interested in rural life will find it helpful.

Practical Garden Book.—By C. E. Hunn and L. H. Bailey. 250 pages. Illustrated. 5x7½ inches. Bound in cloth. Published by MacMillan Co. For sale thru Pennsylvania Farmer. Price 50 cents.

This is the eighth edition of this popular and useful volume ''containing the simplest direction for the growing of the most common things and for those simple garden operations which most books take for granted.'' The subjects are arranged in alphabetical order the notes being brief and condensed and giving just the advice you want when planning or planting the garden.

The Granger Movement.—By Solon Justus Buck, Research Associate in History in University of Illinois. 384 pages, 6 by 9 inches. Bound in cloth. Published by the Harvard University Press. Price, $2.00.

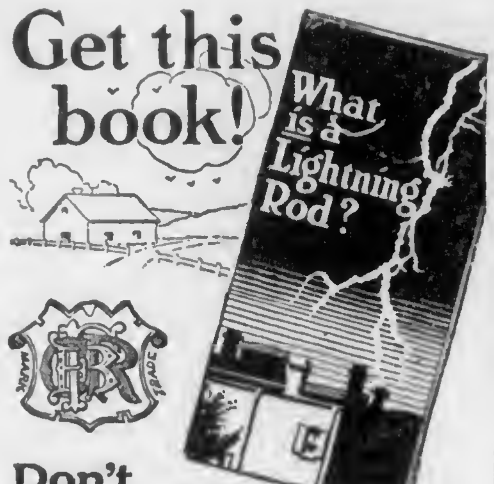
This is a historical discussion of the order of Patrons of Husbandry in its relation to legislation and industrial matters in the period from 1870 to 1880 and was awarded the Toppan prize for the year 1910-11. Of particular interest is the historical and critical treatment of the influence of the grange in relation to co-operative movements, rural social conditions, railroad legislation and rural organization.

Industrial and Commercial Geography.—By J. Russell Smith, professor of industry, Wharton School of Finance, University of Pennsylvania. 914 pages, 6x9 inches. Illustrated. Bound in cloth. Published by Henry Holt and Co. Price, [illegible].

This book teaches geography in a new and intensely interesting and instructive way. As the author explains it ''aims to interpret the earth in terms of its usefulness to humanity.'' Thus ''geography'' is studied from a standpoint of industries and commerce. For example a chapter is given on Cereals, and in this is a study of wheat. The subject wheat is presented under the following sub-divisions: The plant and its climatic requirements, freezing and thawing in open winter, regions with good wheat climate, introduction and breeding of new wheats, effect of process of milling on wheat growing, effect of machinery upon production, yield and production in new countries, effect of cheap wheat upon farm value, wheat growing in foreign countries, manufactured products, future wheat supply. Other products are presented in the same way, thus presenting geographical studies from the standpoint of human activities as affected by the earth rather than by parts of earth as they affect human activities. The book should be of the greatest value to every high school library and every collection of agricultural books.

Suburban Garden Guide.—By Parker Thayer Barnes. 150 pages, 4½x7 inches. Bound in cloth. Published by MacMillan Co. For sale thru Pennsylvania Farmer. Price, 50 cents.

This is one of the Country Life Manual series and, as its name implies, is suited particularly to the suburban garden requirements. Yet it is very complete in notes and tables on garden planting making it useful to all gardeners. It has chapters on best vegetables for the home garden, best flowers, how and when to spray, fertilizing the small garden and an appendix of handy tables of garden rules, planting tables for flowers, vegetables, bulbs, spraying, pruning, etc.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(Conducted by W. C. Fair, V. S.)

(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full, also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Periodic Ophthalmia.—We have a 3-year-old colt just nicely broke to harness which seems to have sore eyes. About 2 months ago left eye became sore and remained so for a week or ten days, now the right is affected much the same and I have been bathing it with warm water. So far as I can tell, it is going to get well, but I would like to know if there is any danger of colt going blind? B. J. W., Warren, Pa.—The symptoms are suspicious and I am quite inclined to believe this a typical case of periodic ophthalmia (moon blindness). Nearly all these cases terminate sooner or later in loss of vision in one or both eyes. Dissolve 40 grains borate of soda, 40 grains boracic acid and a teaspoonful fluid extract belladona in 6 oz. water and apply to eyes, 2 or 3 times a day. Give a teaspoonful Donovan's solution of arsenic at a dose, 3 times a day. A bright light always irritates a sore eye, besides, feeding much grain also has a tendency to keep eyes sore.

Collar and Saddle Galls.—For the past few weeks I have had a great deal of trouble with sore shoulders and sore backs on my horses, more than I have had during the past 45 years of farming. Last winter my horses were fed on corn, oats, flaxseed meal, some cotton seed meal, a few potatoes and plenty corn fodder. E. B. M., Lincoln University, Pa.—Give each of your horses a tablespoonful of Donavan's solution at a dose in feed, 3 times a day, and apply the following lotion 4 or 5 times a day. Dissolve ¼ lb. acetate of lead, 3 oz. of sulphate of zinc and 3 oz. of carbolic acid in a gallon of water. The face of collar and saddle pad should be wet with a 2 percent solution of carbolic acid every evening after they are cleaned.

Tetanus—(lock jaw).—Is it possible for a horse to contract lock jaw on account of nails being driven too high or too near sensitive foot. Would it be possible for lock jaw to develop in one or two days after an injury of either kind so that a diagnosis could be made? C. T.—This disease is due to the entrance into the system thru some abrasion, of a tetanus bacillus and this bacillus or tetanus is most frequently found in the dust of roads and in garden earth, or fertile soil or unclean places. It very often follows wounds located low down on the body which are apt to come in contact with the earth. Lock jaw does not develop in a day or two after the germs enter body, but requires several days, usually a week or 10 days. The shoeing could not have caused it in this case.

Vertigo.—We have a small cow, freshened 7 weeks ago, after being dry 6 weeks. This cow, when brought in from pasture last fall, was thin with good appetite and has never gained much in flesh. After eating all her feed last evening she made a sucking noise, with her head down. On releasing her from yoke she pitched around dizzily and fell, kicking as if dying. The spell lasted about two hours. I give her soda and ginger, but this failed to help her and at the end of 4 hours, at the earnest solicitation of a neighbor who said she had lost her cud, we gave her two cuds made of buckwheat flour and the green inner bark of the elder. This morning she is all right, giving nearly her normal flow of milk. Is there such a disease as wolf in the tail? This cow has a soft part in her tail just above the switch. Neighbors claim if it is cut open and salt rubbed in the wound she will improve and get in better flesh. J. G. S., Milbrook, N. J.—There is no such disease as "hollow horn" or "wolf in the tail." Applications made to tail or giving them a few ounces of buckwheat and elder bark could have little bearing on the health of your cow. She suffered from acute indigestion and vertigo, but recovered. What she needed was a large dose of sulphate of magnesia and a few doses of hyposulphite of soda. From one to two pounds of sulphate of magnesia is a dose for a cow. From ½ oz. to an ounce of hypo-sulphite of soda in feed, 3 times a day, is about the right dose.

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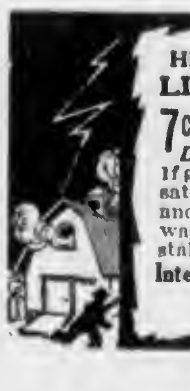

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A County Good Roads Day

By J. M. McKee, Agriculturist, Washington Co., Pa.

"Dig in with us." These are four very small words but when stated as follows: "Dig in with us on Good Roads Day for Washington County" they take a greater significance. And now, after having been emphasized by all manner of means for thirty days, concluded by personal demonstration on the roads thruout the county, these four words mean better roads thru the free efforts of the county citizens.

A country physician who has to drive over the ordinary dirt roads every day in the year finally had it bumped, frozen and mudded into his mind that Washington County ought to have a "Good Roads Day." He got in touch with a number of men at the county seat and won them over to his way of thinking. As the office of our Agricultural Bureau is the common meeting place for country and townspeople alike, Dr. Martin requested us to call together those men whom he had interested. This was done, and after discussing the question fully, we decided on the movement.

We learned early in the movement that the only way to accomplish results was to take the farmer's advice: "If you want a thing done, go ahead and do it." So we went ahead and said that Washington County would have a "Good Road Day" on the 26th of May. This date was chosen with a view to finding a time after the farmers had their spring planting done. Also a day early in the week was selected, so if we had bad weather we could postpone it for a day or two.

The conclusion arrived at from our several meetings was that this movement must be general, embracing all the interests in the county and that to carry on the work we must have an active Central Committee which could meet often. In pursuance of this plan, we had on our central committee, a representative of the pastoral association, a county commissioner, county engineer, state highway engineer, borough engineer, editor of the local paper, a leading political organizer, a leading business man, an attorney, secretary of the local fair board, and the county agriculturist. This committee was then divided into a publicity committee, organization committee and a road districting committee. As a result of the activities of the central board letters were sent out to all the subordinate granges from the Pomona grange master. Letters were sent to the clergymen of the county, many of whom preached a "good roads day" sermon. The judges of our court issued a proclamation calling on all good citizens to work on this day. The supervisors in an annual convention endorsed the work. The school directors at their spring meeting were enthusiastic over it. Boards of trade, town councils, etc., went on record as favoring the movement, and so on thruout the county. Each township or district had its local organization which had active charge of the work and received help from the central committee or suggestions from engineers when requested.

WASHINGTON BUSINESSMEN WORKING ON ROAD.

WASHINGTON AND JEFFERSON COLLEGE FOOTBALL SQUAD FOLLOWING THE SCRAPER IN WASHINGTON COUNTY "GOOD ROADS DAY."

Unlimited publicity was given by all newspapers, thousands of penants and signs were scattered over the county while many automobiles carried banners bearing our slogan "Dig in with us." What was the result of all this? A few extracts taken from newspaper reports tell the story vividly.

At Van Buren

"The old plank road leading thru South Franklin township together with the main highways leading therefrom were placed in excellent condition for travel today when 158 men and 25 teams were at work, together with two engines attached to large scrapers and scarifiers. In addition to the work done by the engines and scrapers, four culvert and two bridges were constructed and 165 perch of stone were hauled and placed on the road. It is believed that the two engines will be secured to go over the old highway from one end to the other as excellent work was accomplished. The road had become hollowed out in the center, leaving several feet on each side. The scarifier attached to the big engine loosened the stone and dirt while the big scraper attached to the engine placed it in the center of the road bed, thus giving a crown to the road, widening the highway and making an excellent opportunity to build side drains. All of the roads in South Franklin township were scraped previous to today and are in fairly good condition. Stones were hauled on the old plank road and all holes filled."

At Centerville

"The women of Centerville borough showed that they are interested in good roads and also that they were capable of doing more than housework. Fourteen of them shouldered their road-making tools and took their places along side of the men for the entire day, raking stone, shoveling dirt and carrying water and making lemonade. In the village of Centerville 49 men and 10 teams were at work the entire day placing the streets in the best of condition. Thruout the borough 145 men and 27 teams were at work and when the day closed the highways of Centerville borough were in better condition than they have been for years. Energy was centered on the worst places in the highways as the other sections are in very good condition."

At Sparta

"Dr. W. D. Martin, the country doctor who was the originator of the "Good Roads Day" in Washington county proved that the citizens of his section backed him up in the movement, as 120 taxpayers of the township were out with all kinds of road tools and 61 teams. In addition there were 45 students from W. & J. College. All the work done was of a permanent nature except the smoothing of the roads and the gathering of stone

Fifteen culverts were built, 80 loads of stone hauled and 50 loads of dirt. The work consisted of stone picking, making fills, widening the roads, dragging them, etc. This township built several drags that it sold to other sections for the cost of making. The roads had been scraped previous to today and the men worked at cleaning out the drains, the under crossings, gathering loose stone and leveling up the highway. Much good was accomplished.''

At Burgettstown

''The worst stretch of road in Washington county was practically made into a boulevard by 53 enthusiastic workers and 16 teams today. The stretch is between Burgettstown and Atlasburg, in Smith township, and is almost two miles in length. Before today even in good weather it was almost impassable because of great ruts. Preachers, physicians, bankers, miners, farmers and citizens of Burgettstown worked hand in hand and by evening the entire thorofare had been gone over and remade. Most of the effort in Smith township was devoted to this road. Teams and men were furnished free of charge for the day by corporations in this vicinity and business men of Burgettstown. Work was done on other roads in Smith township.''

At Hickory

The question of who shall repair the roads taken over by the state highway department kept down the enthusiasm in the good roads movement in Mt. Pleasant township. The road leading from Washington to Hickory was taken over by the state and has been in very bad condition. When volunteers were called for on this highway they were lacking and most of the work on this road in Mt. Pleasant township was done by the college students from W. & J. One squad of students had one lone Mt. Pleasant township citizen with them while another had but three. The superintendents were well pleased with the work of the students and appreciated their efforts where enthusiasm was lacking. On the Westland road, 15 men and one team worked and placed this road in good repair. This highway was also scraped and put in good condition as were many of the other roads of the township previous to today.''

At Scenery Hill

''In the first precinct of West Bethlehem township today 150 men and 15 teams worked on the roads in observance of good roads day. As many men and teams were at work in the second precinct. Two scrapers were used on the roads while other teams were used in hauling stone and filling up bad holes. Several new culverts were made and placed. On the Joseph Wise road, near Dutch Glory, seven new culverts were made and placed.''

At Claysville

''About 50 men, 30 boys, 9 teams, 5 one-horse wagons and one steam roller worked on the streets and alleys of this borough and at quitting time all ugly and mean places as well as tin cans and other rubbish had been entirely removed. Burgess R. R. Holmes declared a holiday and all stores were closed. Forty men, 7 teams and a big steam roller worked on Bell Avenue where four carloads of granulated slag were placed. Ten men worked on Petroleum Avenue and also dragged all alleys. About 30 members of the Boy's Brigade went over the town with five one-horse wagons, gathering and hauling away all rubbish.''

At Lone Pine

'The stretch of highway commonly known as the Lone Pine road, presented a scene of unusual activity. About 35 students comprising the football squad at W. & J. had made some unusually complete preparations for the work. On the Rankin farm, a squad of men had been quarrying and crushing stone for several days, and a huge pile of crushed rock was ready for the volunteers when they arrived this morning. About 50 men in all, with a dozen teams, road scraper and traction engine were in evidence on this road, and the workmen literally 'made the dirt fly'.''

At Houston

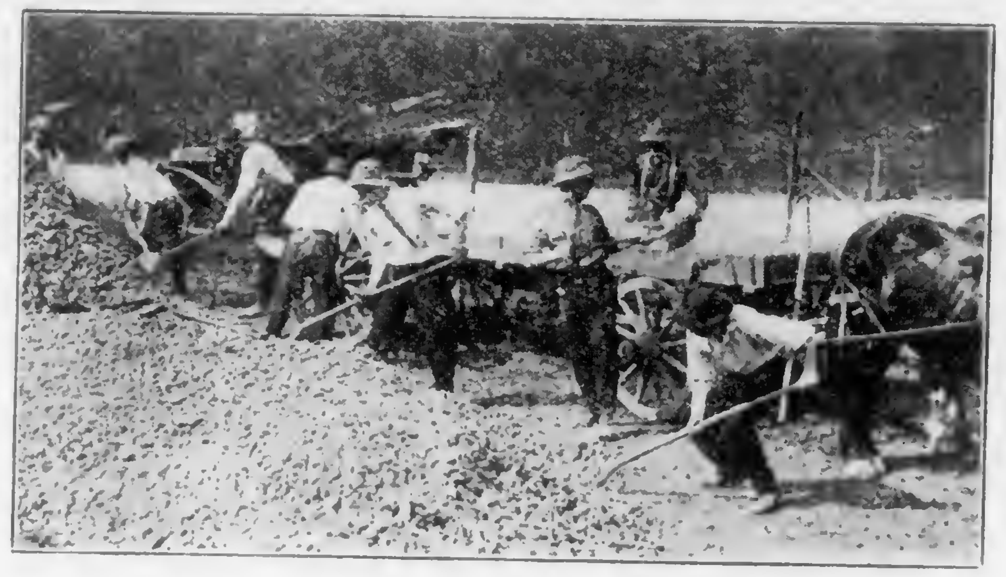
''At Houston the merchants closed their stores and turned out with other citizens and spent the entire day in working the roads.''

At Canonsburg

The work done on the roads in the vicinity of Canonsburg is worth thousands of dollars to the citizens of the community, and cost the taxpayers nothing. Members of the local committee are highly gratified at the success of the county's first Good Roads Day and are anxious to see it repeated at some future time. Already there is talk of effecting a permanent organization whose object shall be to work for better roads and the improvement of highways already constructed.''

At Washington

''In Washington alone fully 1,000 men were identified with the campaign, either by actual work or liberal contributions in one way or another. Automobile transportation for over 500 men was furnished free of charge and on the grounds at 6:30 in the morning. The central committee believed that it was important to the people of the county to have the main highways leading into Washington improved, and accordingly most of their men were placed on such highways, most of which have been taken over by the state and have been allowed to get in very bad condition owing to lack of funds. Certainly, sending men out to all parts of the county within a radius of 15 miles will create the right feeling of fellowship between the townsman and the country man. W. & J. college authorities and students showed themselves abreast of the times by closing college and turning out to a man for work on this day. Many got drags which were built and furnished by the central committee. These were not only worked on the 26th but will be in use thruout the coming year. The Equal Suffrage Association showed their spirit of co-operation by volunteering to furnish lunches for the college students. This offer was accepted and the students were loud in their praises of the lunches furnished.''



W. & J. COLLEGE STUDENTS LOADING CRUSHED STONE. ANOTHER SQUAD QUARRYING AND OPERATING A CRUSHER.

No one can foresee all the results of such a day. The ''Dig In With Us'' call brought out men 80 years of age, glad to give a day's work for the improvement of the general conditions, and one boy four years old worked busily raking stone with his father all day. In brief, it has been stated that this was the greatest general response to any local call that has ever been issued in Washington County. It brought an out-pouring of people from all walks of life, brought them together for a common object; the betterment of the roads in their home community. It served to create enthusiasm for better roads and as a practical demonstration of how much we can do to secure better roads by all pulling together and making our ''kicks'' where the bumps in the road require strenuous action.

Farm Crop Notes

By R. P. KESTER.

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Fads in Farming

Humanity is forever being halved—that is, divided into two parts. I have in mind now one of two divisions. By dividing farmers into ''changers'' and the ''changeless'' we have an unequal division but a very definite one. A great deal is said about the trait of character that is opposed to change and a great part of the cause of the popular topic is charged to the farmers' unwillingness to change the old for the new.

But a conversation with a middle aged man the other day led my mind to the other phase of the question and I have been thinking over ''Fads in Farming'' I have observed. This man came into possession of about $20,000 about the time he was married, fifteen years ago. Today, he is looking for a clerkship or some job for wages. He was a ''faddist'' and was forever changing from one kind of work to another. This man paid $9,000 of his money for a 100-acre farm in a good section. To make the story of fifteen years of fads short, he consecutively tried dairying, hogs, poultry, sheep, fruit growing and trucking. During the last three years he raised general crops, sold everything and has $5,000 left.

While probably this is an extreme case, there are some farmers who are forever changing from one line to another and who do not stay with anyone thing long enough to learn the business. The man who succeeds is the one who can do something well, and the learning takes time. More than that the supply and demand fluctuates, causing periods of high and low prices in every line.

Part of this is due to the natural inclination of some people to change, and part is due to the advice of over enthusiastic speakers and writers. While there are no figures on the subject it is probable that as much money has been lost as has been made on fads. In every prayer should be a petition to be delivered from the faddist, or, as one writer put it, he prayed to be ''delivered from his fool friends.''

There are monumental wrecks in the poultry business, the fruit business, ginseng growing, and the like, to be seen all over the country. When prices are high, men go into pork raising, beef production, potato growing, etc., starting in when prices are high and going out with the first slump, only to try the next fad.

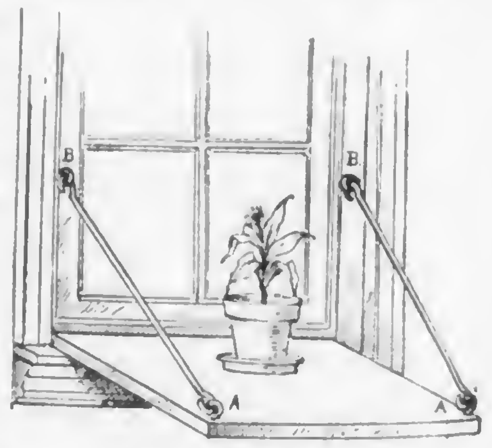
The best advice is, don't. Choose your line, learn it well and stick to it. If you will visit any successful, substantial farmer you will find he has been successful because he stuck to his business, the one he knew, thru thick and thin. Speakers and writers should be careful not to appeal too much to the cupidity of man. The man who is enticed into a line of farming simply for its profits may fail, surely he will if he has not the requisite knowledge. There must be a genuine interest, if not a love, for the business itself. Agriculture is somewhat different in this respect from any other industry. The adaption of crops, the rotation, the building up of a flock or herd all takes time but will bring success to the man who has the knowledge and the continuity of purpose.—R. P. K.

HONEST PACKING

The commission man may be getting nothing more in the way of criticism than is coming to him but while the truth is being told let it all be told. If commission men were saints, they could not return top prices for second class stuff. It does not require an extensive examination of shipments to show that much of it is put up in a careless and unattractive manner, and what is still worse, many times bears evidence of a studied attempt to deceive. Honesty is the best policy, is an old maxim. It is not very good morals but it is a good business motto, and the producer who does not adopt it cannot succeed. No product is so uniform as to be all No. 1, and unless it is graded it will always bring the price of seconds.—R. P. K.

WINDOW SHELF

Here is a good way to make a flower shelf in front of one's windows. Take a piece of board any size desired. Take four staples or screw eyes and fasten two of them in the board at each end as shown at AA. Then put this on your window, and eight inches above this, on both sides of the window, place a staple, or screw eye BB. Then get some wire or chain. Cut it into two pieces so that each piece is one foot long and hook this in the staples. After it has been hooked in, it can be painted any color desired.—Sylvanus Van Aken, Ulster Co., N. Y.



CONVENIENT WINDOW SHELF.

Poultry

A RADICAL TREATMENT FOR GAPES

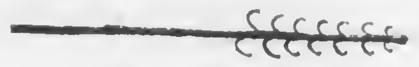
There are a number of so-called remedies for the gapes, but only one of these can I call a ''cure,'' the others being only comparatively efficient. The more efficient remedies involve individual treatment for each bird. When nearly the whole flock has become infected before discovery, as is often the case with farm flocks, these one-bird-at-a-time treatments look to be such a time-consuming task, that the owner usually thinks he cannot afford to adopt them, and casts about for some more ''wholesale'' method. But, in both my experience and my observation of others' use of them, these ''wholesale'' treatments are such uncertain cures, comparatively, that the one-bird-at-a-time treatment is cheapest after all, despite the greater expense in time.

Of all different ''wholesale'' treatment to my knowledge none has been found equally efficient to the well-known one of forcing the affected fowls to breathe dust, thereby inducing such violent coughing, as to throw the gapeworms from the throat. One deficiency of this treatment is that not always does it effect the ejection of all the worms from the throat, and the flock soon becomes infected again. Another objection to it is that in the case of fowls that have been infected for some time before treatment is resorted to, thereby being very run-down and weak, the violent coughing is fatal to a large percentage.

Over a decade ago, in one cold damp spring, ideal for the spread of gapes, nearly my entire flock had become infected before I discovered it, owing to the pressure of catching up weather-delayed field work. When I discovered it I treated them at once by the one-bird-at-a-time method, altho I begrudged the time it took me from field work. Ever since then an occasional gape infection of my own flock, or of several interested neighbors' flocks, has afforded me the opportunity for experimenting. I have been seeking to find something applicable on a larger scale than the single-bird treatment, yet equally effective. So far I have failed in it.

Altho in the single-bird class of treatments there are a dozen of decided effectiveness, all working on the fundamental principle of removing the worm by force, I hit upon a variation of it a few years ago, that so far has a score for effectiveness of 100 percent. I have used it twice in my own flock and on greater or less scale in neighbors' flocks several times. It is this:

An ''instrument'' is made of fishing gut of a large size, such as is used for salmon or lake bass fishing, and at least six inches in length. Soak the gut for 15 minutes in water, when it will be found soft enough for cutting. (It can be cut while dry, but not so perfect an ''instrument'' will result, and the knife soon looses its edge.) Holding the gut in the left hand, take a very sharp knife, (I find a fine-edged surgical one best) and turn back, near one end of the gut 12 to 15 little curls, or forks, being careful not to cut into the gut deeply enough to weaken it. Of course the forks must all point in one direction, and be on the two opposite sides of the gut like this:



GAP WORM EXTRACTOR.

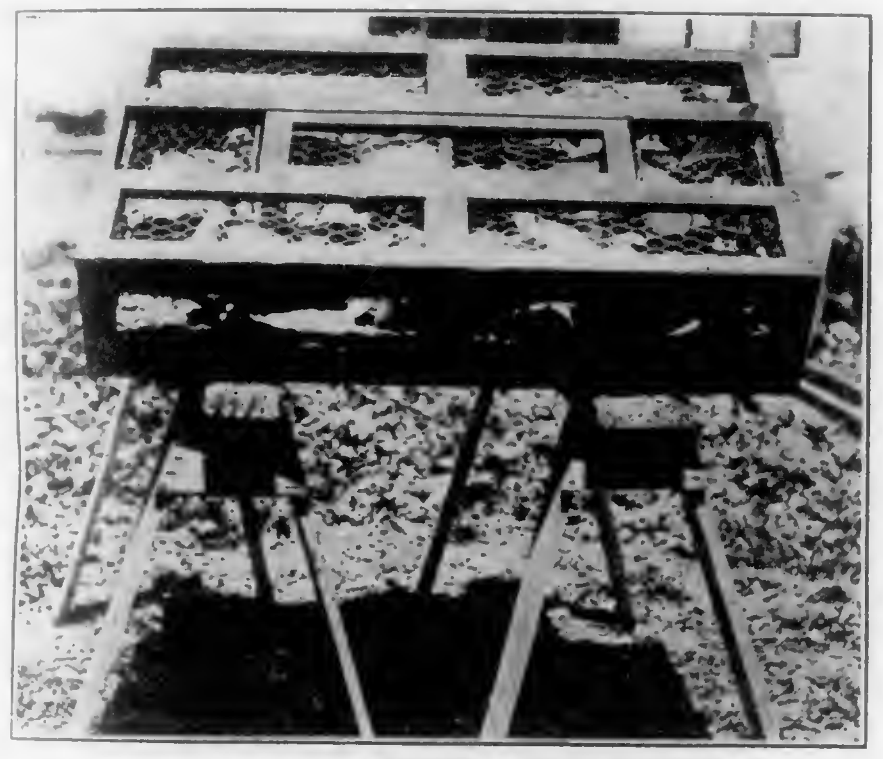
The tip of the gut I make round, or dull, by holding it for a second only, in a candle or match flame. If the forked end is pushed thru any narrow opening or a bit of thin cloth it will be found to pass thru very easily; but when one attempts to draw back every fork catches. To use I proceed thus:

Hold the fowl to be treated lightly against the knees by the head and neck with the left hand, having the back of the fowl's head against the palm of the hand. Hold the bill wide open and the tongue down with the thumb and forefinger of the left hand. (If the bird is quite large it is convenient to have another person hold the bird, instead of knee-gripping it, but an assistant is not really necessary.) In a good light, outdoor sunlight is best, one can look down the fowl's throat and easily see the entrance to the windpipe, which opens and shuts as the patient breathes.

Push the forked end of the gut into this opening from one to four inches, depending somewhat on the age of the bird, of course. Take the free end of the gut between the forefinger and thumb of the right hand and slowly and gently withdraw the gut, at the same time constantly twisting the gut with the finger and thumb so that the forks will come into contact with every part of the windpipe. Two or more red worms about an inch long will usually be found entangled in the forks. If only one worm is caught run a small feather dipped in turpentine down the windpipe, separate the fowl from the rest of the flock and if after a couple of days it still shows gape symptoms, repeat the treatment with the gut. (I have found this second treatment necessary only in a very few cases.)

Usually I have found 2 worms, sometimes 4 or 6 but only occasionally an odd number. In such cases the fowl was given the turpentine-soaked feather swab. The worms generally develop in pairs. They are easily taken off the gut by passing it point foremost clear thru a piece of muslin.

Fishing gut, such as used, can be obtained from any large dealer in fishing tackle. The smaller sizes are too delicate to cut and handle to advantage. With a little practice anyone can make the instrument, being sure the outside ends of the forks are well turned down—each fork forming about two-thirds of a circle. If the forks are left sticking out obliquely they not only are not as effective in entangling the gape-worms, but may injure the windpipe in withdrawing. The forks soon break, or wear out and a new instrument must be made, but the cost of such is inconsiderate. No knife but a very sharp, fine-edged (thin) one will serve to make the instrument properly.—Clark Westford, Schenectady Co., N. Y.



SQUAB RAISING A PROFITABLE SIDE LINE.

A GOOD FARM SIDE LINE

Some farmers think that the regular crops and breeds of stock their fathers raised are all there is to farming. In many instances, the income has been almost doubled by some side line. Some conduct the poultry business as a side line, and a few raise squabs on the side. The experience of I. W. Wood, of California, is worth telling, for he has added $600 to his income each year by raising pigeons.

According to his experience it takes about an hour a day to care for them and they use only about 400 square feet of ground. The pens were inexpensive to build and the feeds are about the same as that for chickens. Every week there are 2 or 3 crates of squabs to sell and they bring a good price. The income is about $2 net per pair per year. He has 300 pair, so the income is $600.

It costs about 10 cents per month to feed each pair, and he raises 7 or 8 pairs of squabs a year. The feeds include kafir corn, egyptian corn, yellow corn, red wheat, hemp seed, screenings, rape, half ground salt, shells, and charcoal.

The squabs are shipped each week and bring an average of about 35 cents each.—J. Y. Beatty, Sonoma Co., Cal.

Light Brahma Year Book.—The 1913 Year Book published by the American Light Brahma Club is a 40-page booklet giving list of members, constitution and by-laws, lists of judges and show notes of interest to Brahma breeders. It also contains a number of valuable articles discussing points of utility of the Brahma breed. This book will be mailed free from the secretary's office to all parties who desire membership in the club. This is a vigorous and progressive club in which all Brahma men should be interested. For full information as to its work address Harvey C. Wood, Assistant Secretary, Bound Brook, N. J.

The big layer is always a big eater, and she pays a good premium on what she eats. The big eater is not always a big layer. Can you tell which of your flock are which?—Kansas Industrialist.

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WHITE LEGHORN CHICKS. PURE BLOODED from free range stock, the kind that lay winter eggs. Hatches every week. June hatched, 8c each.
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GAEBEL BROS. Box G62, Morristown, N. J.

Barred Rocks, Thompson strain; S. C. White Leghorns, Young's, Eggs $1 per 15, $4 per 100. S. C. White Orpingtons, Kellerstrass, $1 per 15. Baby chicks, $15 per hundred. Pullets and Cockerels 8 wks. old, 75c each. Wm. J. Sherman, Cambridge, Md.

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Phases of Management in the Commercial Apple Plantation.

By J. A. RUNK, Huntingdon Co., Pa.

The economical management of a fruit plantation involves a practical working knowledge of much more than simply growing trees. There are problems in starting the plantation which, if worked out satisfactorily, lend much to the later success of the proposition. I refer to such problems as are presented in selecting the site of the orchard, with regard to soil and air drainage, soil composition and organic content, drayage and transportation facilities, and such other fundamentals which should always be carefully considered before the orchard is planted. In these times of enormous interest and resultant large plantings in apple trees, many are ignoring these most important phases which influence the management of the plantation in the future. Frequently I tell the prospective grower that half of the problems in management should be solved before the orchard is planted.

Purchase of Trees

The first subject which I shall take up in detail will be the purchase of trees for the large plantation. Purchase good, strong, well-grown, vigorous, one-year-old trees which are from 3 to 3½ feet in height, either budded or whole-root-grafted. Personally, I prefer good, clean, budded trees, because they have a larger and better developed root system and will therefore withstand the hardships of transplanting better and will push the tree into a more vigorous growth. The whole-root-graft is superior to the piece-root-grafted tree because it has a better root system. Trees, especially one-year-olds, are now mostly graded by height rather than by caliper, because what constitutes a first-class grade caliper in one variety cannot be attained to in another variety; e. g., a one-year Stayman Winesap tree is stocky while Jonathan or York Imperial of the same age is very slender. In height they do not vary so much. In purchasing one-year old trees of best grade one always gets the choice of the nursery, the smaller trees being held over to produce two-year old stock for the retail nursery trade in most instances. The root system of one-year-old trees is not mutilated so much in "cutting loose" with the tree digger which is used in the large commercial nurseries, hence they suffer less shock in transplanting and start into growth very promptly. To my mind however, the most important reason for purchasing one-year-old trees for the commercial plantation is the fact that the owner can head the trees to suit his needs and to satisfy his preference. If he knows the habit of growth of his varieties as he should know them, he can head the tree to suit its growth habit. I am convinced that in order to secure the color and quality of apples which we desire from our eastern plantations, we must grow a more open-headed type of tree.

Later Pruning

Later care and pruning of the trees must be such that a plentiful supply of air and sunlight can reach every branch of the tree. In place of "mowing" off the tops of our trees we must study their habits of growth and thin cut the tops by cutting to side branches and then cutting back as is required to keep the tree within bounds. The production and conservation of fruit spurs is a subject which is terribly neglected. Comparatively few commercial growers seem to realize that apples can be produced only from highly specialized fruit buds which can develop only on the fruit spurs; therefore all pruning must be adapted to the development and protection of these spurs. Very frequently careless or indifferent pickers destroy many fruit spurs which should not be lost. The careful cutting out of canker and rot blights and fire blight when it occurs is a very important phase of orchard management. Good management consists in prolonging the bearing life of the orchard as much as possible and there is nothing which weakens the vitality of the trees and shortens their life more rapidly than the cankers and blight. Careful and consistent spraying is a powerful adjunct to the pruning knife in preventing such ravages in our young orchards.

The Conservation of Moisture

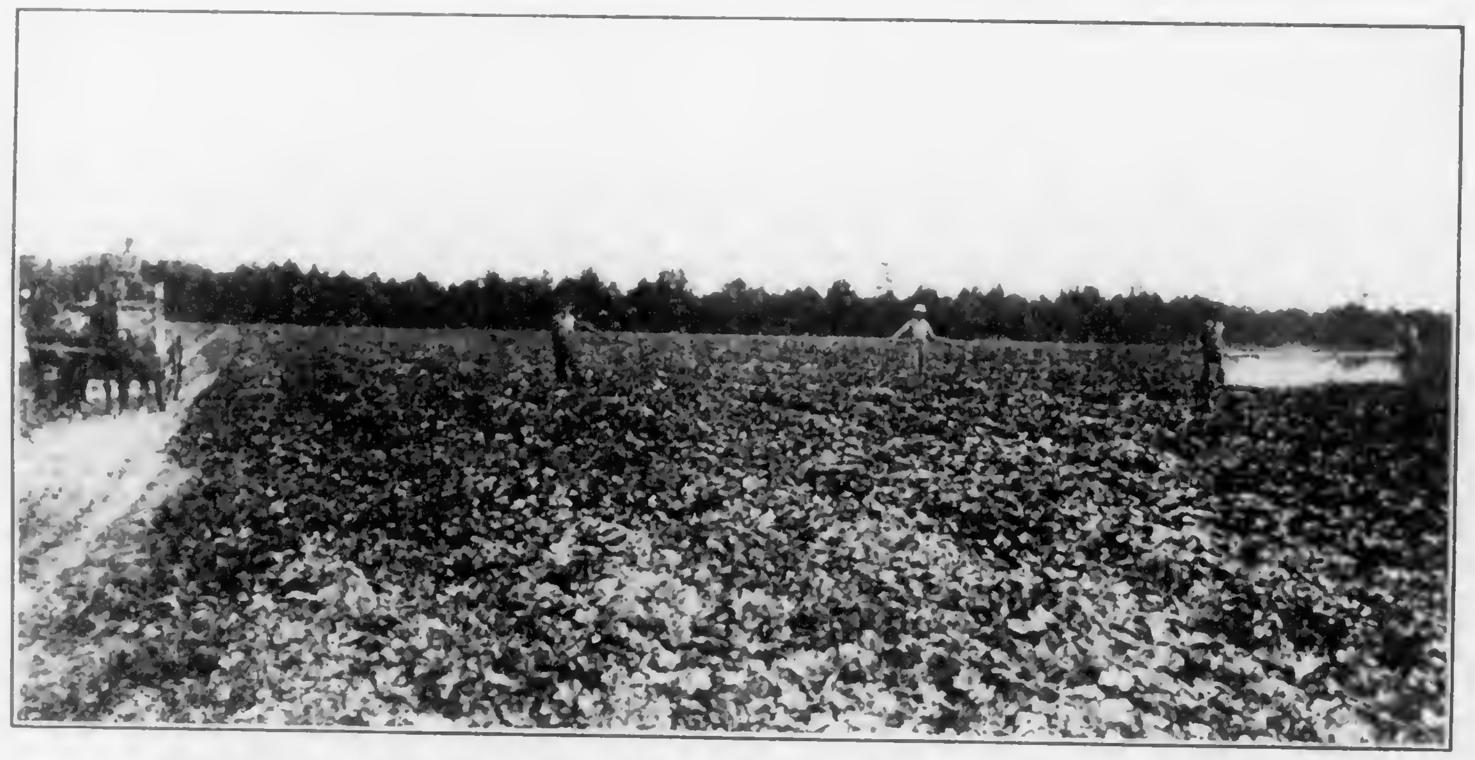
It is my personal observation that the available supply of moisture limits the production of apples in the commercial apple orchard more frequently than any other phase of summer management. It is not my intention to discuss the relative merits of the sod-mulch and clean cultivation methods of managing the bearing orchard but I do note that a good mulch frequently gives a much greater and more regular supply of moisture to the trees while they are maturing crops of fruit than the indifferent cultivation methods which many commercial growers practice. It is mighty important that a good earth mulch of at least 3 inches deep, be maintained in the orchard until the fruit is fully matured if we are to get the greatest returns in bushels of good fruit. I will admit that a cover crop must be grown but I am not ready to admit that the cover crop growth or the lack of cultivation must be permitted to rob the tree roots of a bountiful supply of moisture. Frequently we see bearing orchards lying bare and solid during the months of August, September and October. Under such conditions and with such weather as we frequently incur during those months, the evaporation of moisture may be tremendous. Such loss seriously affects the quantity of fruit which the orchard can produce.

Cultivation, Tools and Methods

It is scarcely the province of this paper to discuss cultivation in all its details. However, there are several important factors which I desire to place before you for careful thought and consideration.

In the first place I want to raise the question as to whether our Pennsylvania fruit growers are using enough up-to-date orchard cultivating machinery. My observation has been that the great majority of our orchard cultivation is being done with only the turning plow and the spike and spring tooth harrow. The general farmer may get along with these few tools, but our most progressive farmers do not attempt to do so, neither should our fruit growers. In the preparation of the orchard for planting, the turning plow has its place, but for the later plowings there are several good makes of light gang plows carrying two or three light steel plows which may be operated by the average two horse or two mule team and with which three to four acres may be turned each day. They have the additional virtue of permitting close plowing to young trees, because of their "extension" construction. Then, too, the ground may be plowed thoroly without leaving the large unworkable finishing furrows between the rows and without ridging the soil so much in the tree rows.

Disc harrows with extension frames should be a part of every orchard's cultivating equipment. These may be had with both single or double gangs of discs. The double-acting tools have a decided advantage for orchard cultivation because they leave the land practically level whereas the single-acting tools leave the land quite irregular. The extension frame permits the driver to keep his team away from the trees far enough to prevent injury while he is cultivating right up to the trunk of the tree. For my own use I find the "cutaway" type of disc very satisfactory for orchard cultivation.



UNIQUE METHOD OF SPRAYING CANTALOUPES USED ON FARM OF REPP BROS., GLOUCESTER CO., N. J.

The Acme harrow equipped with an extension frame has given very good satisfaction in my own orchard. Its cutting blades fine up and pulverize the soil leaving an ideal earth mulch in its wake. It may be equipped with spring teeth, thereby making a very satisfactory extension frame spring-tooth harrow.

No orchard is completely equipped with cultivating tools which does not contain one good orchard cultivator which is light in draft and covers the ground rapidly, forming a good earth mulch. Such a tool conserves both man and horse labor in cultivation work.

What constitutes good cultivation methods in a commercial orchard? The primary object of cultivation in the orchard is the conservation of moisture (see preceding discussion), therefore the plowing or stirring of the soil should take place quite early in the spring and such cultivation should follow with the aid of the tools discussed above, as will maintain an "earth mulch" three or four inches deep thru out the growing season. The character of the soil and the manner of the rainfall will largely determine the number of cultivations which will be necessary each season.

Spraying

We need to do more intelligent spraying in Pennsylvania. We must study to know what we are spraying for and then we will know what spray material to use and when to do the spraying. Whether we have scale insects or not, there should be one dormant spraying made with concentrate lime and sulphur solution, either commercial or home-boiled. This helps to keep the bark of the tree healthy and vigorous. When "Black Leaf 40" or some similar tobacco product which is injurious to aphis, is used with lime and sulphur and the spraying is done in the spring just before the buds begin to open, the winter forms of the aphis may be destroyed and the insects thus largely controlled.

Careful and persistent spraying with arsenate of lead is the only means for controlling the codling moth. In many of our fruit sections there are yet sufficient old and neglected orchards to make the codling moth an ever present enemy. The new angle nozzles, the spray rod and the spray tower are splendid auxiliaries for fighting the codling moth. For the second brood spraying the arsenate of lead should be mixed with summer strength or self-boiled lime and sulphur.

The curculio is doing a great deal of damage in many of our isolated orchards. A second spraying with arsenate of lead should follow the first codling moth spraying by about two weeks so as to keep the small fruits covered with the arsenical spraying to combat the feeding of the curculio.

I have found by personal experience that it is an exceedingly difficult proposition to rid old trees of San Jose scale with lime and sulphur, especially when they are badly infested. In such cases I have resorted to the use of a miscible oil with success. The miscible oil spray spreads over the entire tree when it has been well sprayed. With the lime and sulphur spray, the entire surface area must be covered.

In connection with spraying, I should like to emphasize the fact that bordeaux mixture should be used on all old trees to control the cankers and the bitter rot. I saw a good crop of Grime's Golden apples from eight year old trees go down with bitter rot two years ago. It could have been saved with bordeaux. There are too many old, neglected orchards in most sections of our State for us to abandon the use of copper sprays. Personally I think that at least two sprayings with bordeaux should be given, one in the early spring and one during the late summer season.

Thinning of Apples

There is no question but that the eastern grower should aim to grow a maximum amount of well colored fruit of the first grade. To do this systematic thinning is very necessary. It is true that even picking of the malformed and infected fruit will help greatly but we must practice an actual thinning out of the fruit to secure the results we need. Thinning to eight inches is not too much for the most of our varieties, in fact such thinning usually pays well. If we keep our trees headed low and the tops well opened by pruning, the thinning work may be greatly facilitated. Thinning should be done in our territory in June as far as possible to secure the greatest results.

Storage Problems

In the future, gluts in the apple market are sure to occur. With the present rate of planting it cannot be otherwise. The commercial grower who is to make a success of his work and reap the profits which are due him must be prepared to control a large percentage of his product when such gluts occur. Then too, the commercial grower must be independent of the unscrupulous dealer who tries to force down prices during the fall selling season in order that he may secure great profits.

There are two means of avoiding the above conditions. One is to provide temporary storage for your apples and place them in cold storage as soon as possible; the other is to build storage plants on the fruit plantation and store large quantities of fruit there. Local and home storage plants are working successfully in other sections and they may be worked successfully in Pennsylvania. The Gravity Brine System of storage seems to me to be admirably suited to this class of storage. It is economical to build, also to operate. Suitable cave or cellar storage may be worked out for several thousand bushels of apples on almost every plantation. I know of several such storage cellars which are netting good money for their owners every year because they are enabling them to dispose of practically all of their fruit on their home markets at a good net profit.

SPRAYING CANTALOUPES

A neat and labor saving spraying device is in use on the Repp Fruit Farm in New Jersey. The illustration shows the method of spraying cantaloupes. The spraying machine used employs a compressed air system by which compressed air is passed thru the spraying liquid, agitating it freely and is then separated from the liquid and passed up thru a separate quarter-inch tube of the double hose and thru the extension rod, mixing with and atomizing the liquid as it emerges from the nozzle.

In spraying cantaloupes on the Repp Farm a hose about 45 feet long is used, with a perforated extension rod at the end, sufficient to deliver the spray over ten feet of plants. Men are placed at fifteen foot distances on the hose to keep it from dragging and damaging plants. The spraying machine moves along with the men handling the hose. The saving over the knapsack method is in the larger area sprayed at one time and in the comparatively short time necessary to get over these areas.

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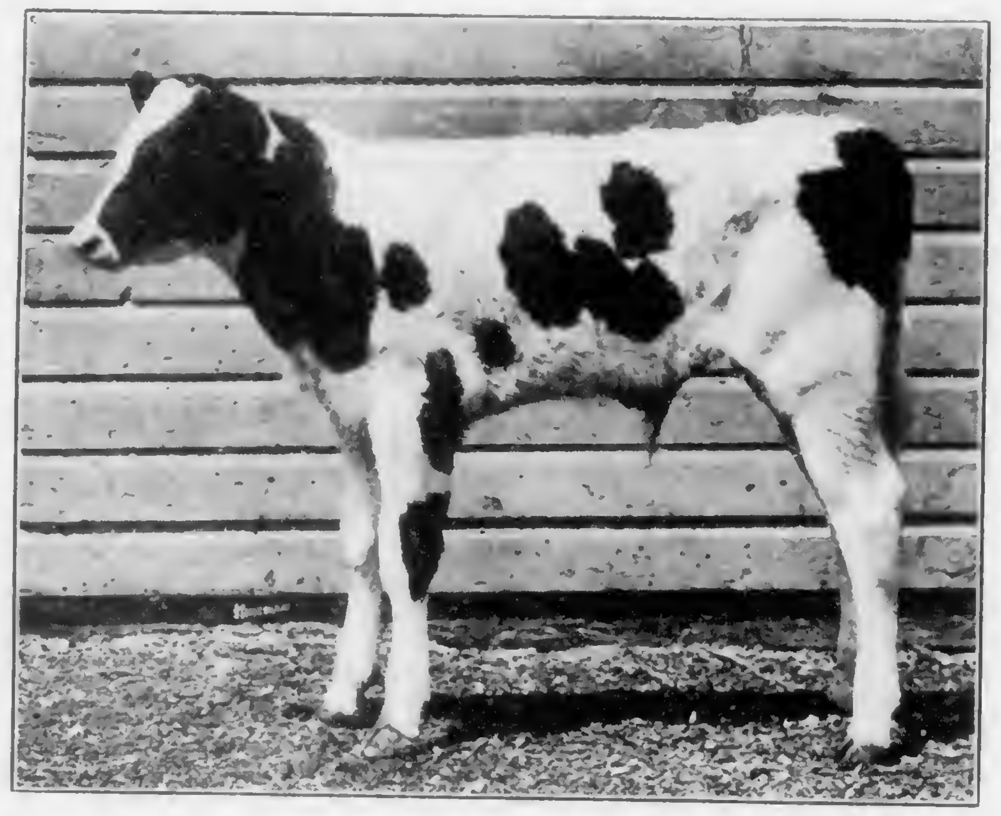
The Dairy

EFFECT OF RATIONS ON COST AND QUALITY OF MILK

The United States Department of Agriculture has recently concluded a series of interesting experiments to determine the effect on the flavor of milk of feeding different kinds of rations to cows. The experiments were conducted to ascertain the correctness of the theory of some dairymen that the feeding of crushed oats to cows would improve the flavor of milk. Six cows were used in the experiment and the various kinds of rations were fed to them. In all, fifty opinions were passed on the various samples of milk from these cows. Of these, sixteen showed a preference for the milk from cows fed on crushed oats, twenty-five preferred that from the bran and corn ration, while nine expressed no choice. The government experts express the opinion that in these rations, not only were there no marked differences in favor of the crushed oats as a fed to improve flavor, but if anything, the ration containing bran and corn was more successful in producing a fine flavored milk.



KING SEGIS PONTIAC CHICAGO, HOLSTEIN BULL CALF, SOLD JUNE 5, 1914 FOR $20,000.

At the New Jersey experimental farm, some very practical experiments with the dairy herd have been conducted for several years, in order to throw some light on this question of feeding. These cows are managed as a commercial herd rather than as an experimental one, and are used to produce milk for a milk route. In connection with these experiments the effect of so called "good" and "poor" rations have been tried. The good ration consisted of 4 pounds of wheat bran, 4 pounds of dried brewers' grains, and 2 pounds of linseed meal, together with 5 pounds of timothy hay and 30 pounds of silage, and had a nutritive ratio of about 1 to 5.3. The poor ration consisted of 4 pounds of corn meal with 8 pounds of timothy hay and 12 pounds of corn stalks, and had a nutritive ratio of about 1 to 13.5. The latter ration, I have found is quite common in many districts. In a period of 30 days 4 cows produced on the good ration 2,701 pounds of milk and 131.04 pounds of butter; and in a similar period on the poor ration, 2,014.2 pounds of milk and 94.32 pounds of butter. The good ration therefore gave 687.5 pounds more milk and 36.7 pounds more butter, equivalent to 34 percent more milk and 39 percent more butter on the ration containing the larger amount of grain. At local prices for feeding stuffs the cost of producing 100 pounds of milk and 1 pound of butter was practically the same for the two rations, but it is pointed out that 20 cows fed the good ration would produce as much milk and butter as 30 cows fed the poorer ration. To quote the report: "It has been claimed that, other things being equal, a small herd well fed will prove more profitable than a large herd poorly fed, and the facts brought out by this study seem to emphasize the correctness of this claim and point to the importance of good feeding in the economical production of butter."

Experiments were also made in feeding different amounts of the grain making up the good ration. Rations of 10, 15 and 20 pounds per head were fed to the cows in full flow of milk. The indications were that while a healthy animal may consume large quantities or grain, the rate of increased yield is not in proportion to the increased amount of grain used after a certain point is passed. Rations containing more than 10 pounds of grain a day while profitable were less so than those containing this amount.

Cost of Producing Milk.—Another interesting matter which has been solved quite satisfactorily by our New Jersey Station, is the cost of market milk. The results of such experiments show that the average cost of feed per quart of milk was 3.04 cents, and the total cost of milk, including labor, was 4.16 cents per quart, when the figures were based on the cost of growing the feed consumed. When the cost per quart was based on the market price of feed, the total cost was 4.8 cents per quart. By comparing these figures with those of the New York, Massachusetts and Canadian stations, I am convinced that it costs a trifle more to produce good milk in New Jersey than elsewhere. I ascribe this fact to slightly higher price of hay and mill feeds, as well as the greater wages paid to farm hands. It is an interesting field for study, this determining the cost of producing milk, and one to which every producer should give greater attention.—D. T. Hendrickson, Monmouth County, N. J.

DAIRY RATION

"I have been feeding a bran mixture to my dairy herd during the winter season. I want to drop the bran out during the summer because of the high price. I am feeding 25 pounds ensilage a day and some corn fodder, along with meadow hay. I will have clover hay later in the season. Will you kindly give me a balanced ration of good yellow dent and cob meal, linseed meal, cottonseed meal and a good stock food if you advise the latter." H. R. D., Bechtelsville, Pa.

Twenty-five pounds of silage is a very satisfactory amount to feed. I would not feed over four pounds of the corn fodder and as much of the meadow hay or of the clover hay as the cows will eat up clean. Feed one pound of the following grain mixture for each three pounds of milk which the cow gives: 150 pounds corn and cob meal, 25 pounds linseed meal, 75 pounds cottonseed meal.

As a rule I would not practise the feeding of dairy mixed grains because in general you can buy the well-known grain and compound a ration of your own at less cost. There are cases when a man does not care to take the time to mix feeds. Then commercial feeds undoubtedly have a place. Of course the price of grains determines what you feed largely and if you are offered the stock feed at a low enough figure and if the analysis shows that you are getting the ingredients cheaper than you are in the grains, it is all right to buy them.—F. S. Putney, Ass't Professor of Dairy Husbandry, Pennsylvania State College.

NOTABLE HOLSTEIN PURCHASE

The illustration on this page shows King Segis Pontiac Chicago, a Holstein bull calf sold recently at Chicago for $20,000. The purchasers were Spencer Otis, H. Stillson Hart, George E. Van Hoegen and Spencer Otis, Jr., all of Barrington, Ill. This calf carries the combined blood of some of the most noted Holstein families, and the purchase price indicates the faith which his new owners have in his ability to transmit the valuable characteristics to his offspring. Is the purchase of so young an animal at such a price a gamble? Most of us would consider it so, but if the animal shows a happy combination of the dairy characteristics of his ancestors he will be worth many times the price paid.

ALFALFA AS A SOILING CROP

How to Cure and Handle It

In all sections of the country farmers have been experimenting with alfalfa, and in nearly every township a few have studied the plant and by conforming with its requirements have successfully grown an acre or two. Having this crop, which is almost as valuable when rightly cured as an equal weight of grain, or as a bank account, for it saves drawing from it to buy grain for live stock, one may not realize its full value unless he knows how to handle it rightly.

First, when deciding to cut the alfalfa, pay little attention to the blossoms, altho they are usually partly out when it is ready to cut. Look rather at the roots of the plants. When the next crop is sprouting from the roots, the present one is at its best and cannot be left longer without injury to the one that has begun to grow. It is the nature of the plant to start four crops a year from the roots, and we aid it in making a maximum amount of forage during the summer by getting each crop out of the way as soon as it has made its growth. We also increase the vitality of the stand of plants and the length of time they can be profitably maintained.

I will assume that the small acreage is on the dairy farm, and will be used to supplant failing pastures or balance ensilage in the summer silo. As far as it can be used, alfalfa is the best soiling crop on earth for the dairy cow, yet there are some reasons why, as it will be generally handled for this purpose, dairymen will not get the most out of it. Some may try to mow and feed the green alfalfa every day, and the unwilted alfalfa may cause bloat in animals. Again, during rainy weather it is very disagreeable to cut and feed the the green alfalfa and the danger of bloat is still greater.

Another reason why feeding fresh-cut alfalfa will not be satisfactory is that it cannot be well cut continuously. Altho there is a crop growing all summer and the first crop can be cut early in June and the fourth the last of October, there are two or three weeks between each harvest when the alfalfa should not be cut as the crop is only partly grown and of course all the alfalfa matures for cutting at the same time.

In the following way we avoid the difficulties and get all its feeding value: When we have decided the alfalfa is ready for cutting we wait for a time when we can expect two or three days sunshine. If it is to be used for soiling cattle at the time, we mow what is needed for perhaps a week and let it wilt considerably in the swath. It may need some tedding if there is a large growth. Then we put up rather high, narrow heaps and cover with hay caps and let it remain until fed. If the alfalfa is to be made into hay to be stored in the barn, it should be wilted more before heaping, and then left in the heaps until it is so thoroly cured that there is no danger of excess heating in the mow.

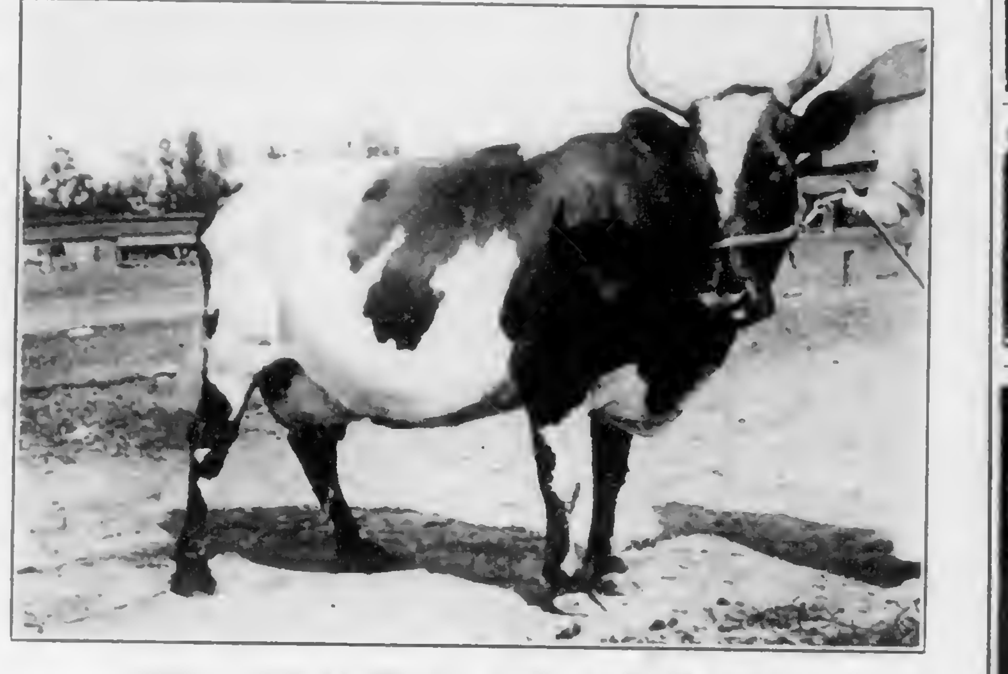
Forage next best to wilted alfalfa is new alfalfa hay cured just enough so it will keep over two weeks or more. This may be stored in the barn and fed in the manger, which probably is the best way. If one wishes to save labor a considerable quantity can be put in large covered, slatted racks in a yard where cattle can be allowed to go at will. Cattle on pasture will always eat more or less of this alfalfa placed in racks if allowed to go to them any time. When the pasture is abundant and is too succulent, or when it is drying up and perhaps corn silage is fed, the new alfalfa is almost equally valuable.

As farmers learn better how to grow good crops of alfalfa more will be put in the barn for winter to balance the corn silage. Mastering the difficulties in the way of growing it will solve the farmers' problems of economical feeding of animals and restoring soil fertility.—J.

A GOOD HERD IN COMFORTABLE QUARTERS

Many farmers are confronted with the problem of remodeling old-style buildings to make them comfortable for the dairy herd. Mr. J. Henry Stewart, Steuben Co., has such a remodeled stable which is giving excellent satisfaction. Three things about this stable impressed me. There was good light, good ventilation and warmth. Entering on a cold day last winter the good temperature, devoid of stuffiness, was very manifest. The building, in the basement of which the cows are housed, is an old barn, about 25 by 35 feet in size, which has been newly walled and lighted, the cows occupying the whole basement. They stand in two rows facing, with a feed alley between. The mangers are perhaps six inches deep and about 18 inches in width. The stanchions swing, as well as have a small movement ahead as the cows rise and lie down. A gutter behind the cows receives the excretions, which are not allowed to remain longer than the first chance to remove them to a wagon standing outside. Manure is never allowed to accumulate inside or outside the stable. The cows do not bear the usual stable marks but show good care.

This dairy consists of sixteen cows now giving milk. There are also ten young heifers coming on—a beautiful herd. The bull shows fine dairy points. The entire herd is in fine condition, and ten giving milk at the time of my visit were producing 100 quarts daily, which went to the Rochester market at 4½ cents a quart. The monthly milk checks have ranged from $128 to $152 since April 1, 1913, when he began selling milk in this way.



AYRSHIRE COW, BONNIE REG. GIVING 64 LBS. MILK DAILY.
Owned by J. Henry Stewart, Stueben Co., N. Y.

All forage for the herd is supposed to be produced on the 100-acre farm, but most of the grain feed is purchased. During the winter the cows received shocked corn fodder and mixed hay alternately, and a grain ration of bran gluten and hominy meal, equal parts by weight. Of this the cows received one pound to each three pounds of milk. Later in the season he fed buckwheat middlings and corn meal, equal parts, with no noticeable falling off in production. The cost of the grain feed was about $1.35 per day for the entire dairy herd, while the income ranged around $4.50 daily. The net income would not be far from $3.00 daily after deducting cost of feed, freight, etc. The fertility added yearly to the farm, is no inconsiderable item, which comes from adding a load of manure daily during much of the year. The manure is enriched by tons of purchased feeds. The farm which was formerly given to potato growing is showing great improvement.—Clarke M. Drake, Steuben Co., N. Y.

Some Faults In Formaldehyde Disinfection Of Potatoes.—Popular edition of bulletins 369 and 370 of the New York Experiment Station at Geneva, N. Y., is a discussion of the above topic, which may prove of interest as a comparison with discussions which advocate the formaldehyde treatment unreservedly.

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Live Stock

FINISHING OFF ON SOY BEANS

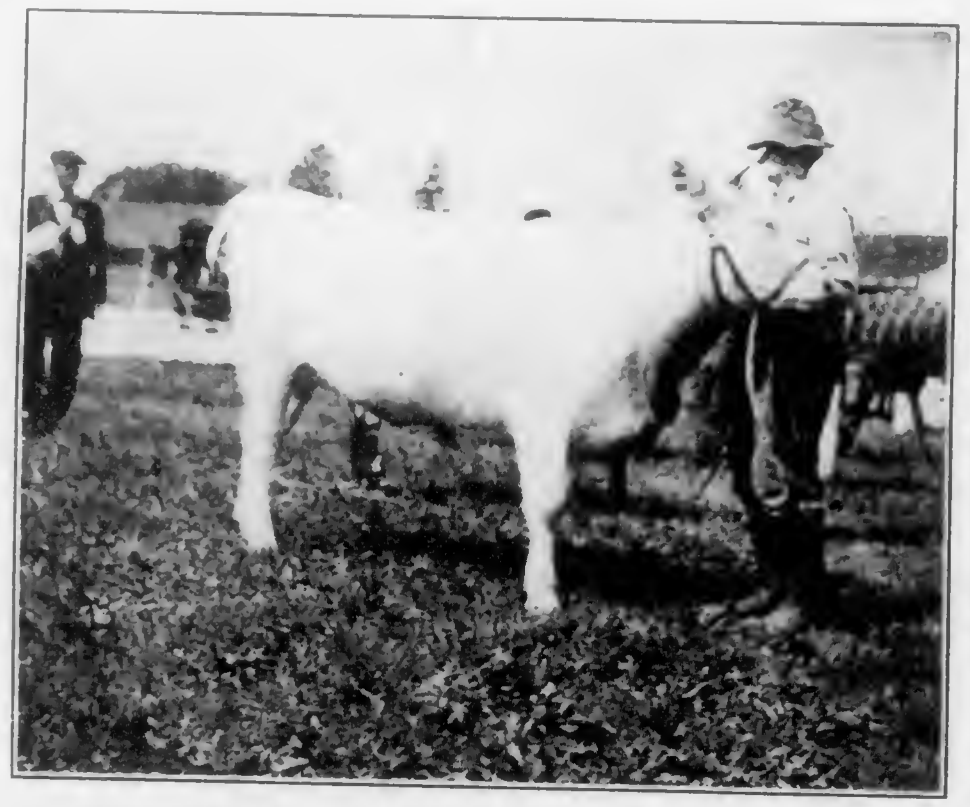
Several years ago the Tennessee Experiment Station carried on a comparative test in finishing steers, using corn silage as the roughage with each lot, but finishing off separate lots on soy beans, on cowpeas and on corn. The experiment was continued for two years, and with two lots of steers. Aside from the fact that the steers fed on soy beans made nearly three times as much flesh on the product of an acre as did those finished on corn, there was the question of quality of the meat. All the steers were butchered by one of the large packing houses, and the meat passed on by an expert. In every instance the soy bean-fed steers produced meat of higher quality than those finished off on corn; meat that brought a higher price in the market.

We are hearing a good deal about hogs finished off on peanuts. There is no question of the quality of the meat, nor that it is really bringing fancy prices in the market in competition with corn-fed pork. Talk to a Canadian farmer and he will tell you that hogs fed on field peas make a much better quality of pork than the corn-fed product. He will admit that the pork is not as firm, but says it has a finer flavor.

By a succession of plantings it is possible to keep hogs on soy beans until very late in the fall. Certain varieties hold their seed splendidly after ripening, notably the Wilson, Haberlandt and Swan; and the Hollybrook is late in maturing and holds its seed quite well enough for the purpose in view. The gains in weight on such feeding are heavy, and the pork is of a very desirable type, rather lean, as the soy beans go to make flesh rather than fat.

This type of hog feeding is desirable because the hogs do the harvesting, and because they undoubtedly make greater gains from a given area of soy beans than they would from the same area of corn. But I can not get away from the fact that, in addition to the larger gains and greater income per acre, there should be the same distinctive quality of meat in soy bean-fed hogs as has been found in the case of the steer, and that a market could be built up for the product at better than common prices.

Of course, under such conditions, the ground could not be used for wheat in most districts of the north; but it could be used for rye and the nitrogen and humus from the soy beans will make a bumper crop of rye. For such work the soy beans should be drilled in thru every feed using the oats and barley feed, or broadcast. If planted in this way the root system will keep the ground in shape so as to make the late fall plowing more certain as well as easier.—Abram Bunn, Bedford Co., Pa.



THE TYPE OF SHORTHORN FROM WHICH BABY BEEF IS PROFITABLY PRODUCED.

ECONOMICAL GAIN MADE ON BABY BEEVES

The farmer who is feeding calves will be gratified to learn the results of a recent experiment carried at the Iowa Experiment Station. It was demonstrated that gains could be made on "baby beeves" with about 50 percent corn and cob meal, cost of which would not exceed in any case, over $6.50 per hundred pounds. This cost of gain compared with cost of gain of 2 year-old feeders, shows why young calves are so popular for feeding. It costs from $9 to $11 or $12 per hundred to put weight on the 2 year-olds.

Three groups of calves were used. They weighed 385 lbs at the start and were fed for 203 days at which time they weighed somewhere around 903 pounds. Those fed on a ration of corn and cob meal, cottonseed meal, clover hay and corn silage, made an average daily gain of 2.26 pounds and weighed at the end of the experiment 843 pounds, having made the gain at a cost of $6.04 per 100 pounds. The daily rations fed were: Corn and cob meal, 11.66 pounds; cottonseed meal, 0.84 pounds; clover hay, 203 pounds; corn silage, 5.16 pounds.

The group fed daily on 13.40 pounds corn and cob meal, 1.84 pounds cottonseed meal and 2.06 pounds clover hay, silage omitted, made an average daily gain of 2.18 pounds and weighed 829 pounds at the end of the experiment; having made their gains at a cost of $6.46 per hundred pounds.

The group fed corn and cob meal, 13.70 pounds daily; oil meal, 1.84 pounds daily, and clover hay 2.04 pounds daily, no silage, made a daily gain of 2.31 pounds, weighing 854 pounds at the end of the experiment and made gains at a cost of $6.23 per hundred pounds.

Corn and cob meal sold for 53 cents per hundred pounds when the experiment was conducted, oil meal at $30, clover hay at $12 per ton and silage at $3.25. This did not take in the profit on the hogs which ran with the steers. The baby beeves made a net finishing profit of $20.13 per head, as against a profit of $14.01 per head on yearlings and 2 year-olds. It is quite interesting to note that the bunch fed on silage made the most economical gains.—S.

SWINE

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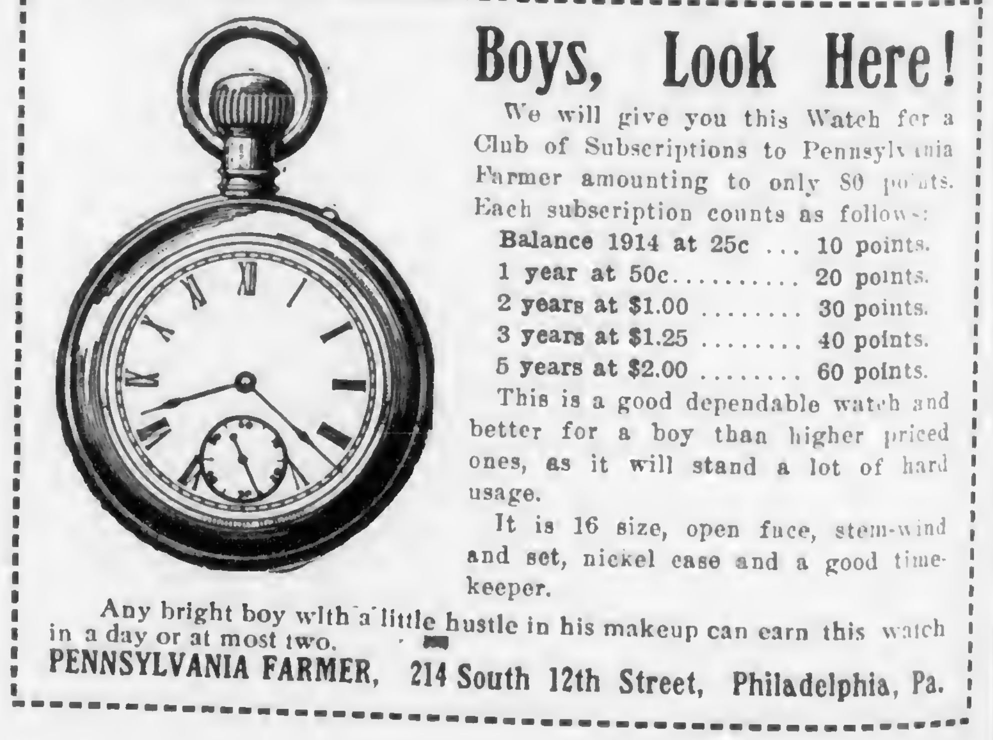

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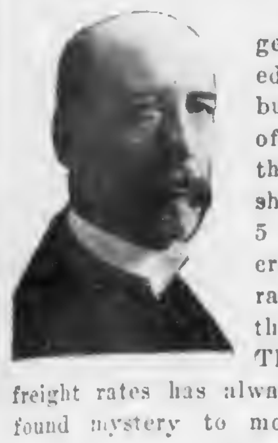
Looking Over The Fence.

By THE COUNTRY PARSON.

Waste in Railroad Transportation



It seems to be generally conceded by the larger business interests of the country that the railroads should have the 5 percent increase in freight rates for which they are pleading. This question of freight rates has always been a profound mystery to most laymen. I am inclined to think that the rate makers themselves do not understand it. I fear that the rate situation, like some of their terminal freight yards, is the result of a haphazard growth. As their needs expanded, they added spur track and switch to spur track and switch until they got things in such labyrinthine shape that they often lose their own cars. The only thing to do is to replan and rebuild the entire yard—an annoying and expensive, but nevertheless a most necessary undertaking.

In a like manner, as their business grew they seem to have added classifications to preferentials and preferentials to classifications, without definite plan or regard for sound economic principles, until this whole rate-making business is in a frightful tangle. I do not know that we can blame them particularly for this is the general tendency of all human affairs, which every now and then need more or less radical readjustment. While it may not always be possible for an outsider to say how, it is seldom difficult to say when such readjustment should be made.

Feeling that their first duty was to their stockholders, the early rate makers unhesitatingly put on all the "traffic would bear." While the outcome showed this to have been a shortsighted policy on their part, it was nevertheless an entirely human and excusable one. In their place, we would have undoubtedly done the same thing. Nor is it clear to me that the watering of their stocks is alone responsible for their present troubles. They did other things, as shortsighted and reprehensible as stockwatering.

For one thing, they largely succeeded in destroying the first efforts of this country toward the development of a system of inland waterways. In some instances they actually laid their tracks in the beds of canals constructed by the toil of former generations. While pleading for the maintenance of the competitive system, their efforts to check competition destroyed a means of communication, which, had it been used for heavy freight, would have permitted the use of the railroads for passenger and fast freight service, thus preventing the periodical recurrence of freight congestions whenever they are called upon to move a crop. They failed to forsee the demands which the business development of this country would make upon them. Had it not been for the saving sense of the people of the State of New York, they would have destroyed even the Erie Canal. We are as much to blame as the railroads, for we not only permitted, but encouraged them to do these things.

By giving them outright immense tracts of the richest agricultural lands of this country, we made it to their interest to encourage the depletion of these soils. The railroads had a threefold interest in moving the immigrant as far west as possible. They sold him his tickets; they sold him his lands and they moved his crops. That they were separating producer and consumer and that the disadvantage of distance must be met by rate adjustments which enable a Texas farmer to ship turkeys to New York in competition with the man who can haul them to the city market is apparent. The decline of agriculture in the East and the exploitation of the West was an inevitable consequence. Like the people who denuded the watersheds of the Allegheny and Monongahela of their forests for mine timber and called it development, these rate makers boast of having developed the West. Now they are calling upon the government which means the people of the United States, to save them from the fatal consequences of their own shortsightedness.

This plan of rate making has tended to build up a few great cities and industrial centers at the expense of the country at large with this result: While the farmers find it impossible to get labor, 65 percent of our present immigration goes to Pennsylvania, New York, New Jersey, Connecticut and Massachusetts. The one state in the Middle West receiving any considerable immigration is Illinois, which gets about half as much as Pennsylvania. The centralization of our immigrant population in a few sections of our country is one of the gravest problems of our national life—a problem for which the railroads are largely responsible.

A long haul may be temporarily profitable to them but its economic wastefulness and social harmfulness are immediately apparent to any person who will stop to give the matter a moment's thought. I can understand why citrus fruits should be cheaply transported from Florida or California to sections of the country which cannot grow them. I cannot understand why Boston should get its milk from Canada or why Texas should ship turkeys to New York.

The railroads may need this 5 percent increase. At most, it will be a mere temporary expedient, like adding a switch and a spur track to an overloaded freightyard. What we need is a national rate policy for our whole system of transportation, including railroads, canals, trolley lines and coastwise steamers, shaped not merely by a regard for the rights of the stockholders, but by a statesmanship sufficiently broad to take into consideration the general welfare of the entire nation. Perhaps, the proposed physical valuation of railroad properties will lead to the adoption of such a policy. Perhaps the railroads may be sufficiently broad minded to co-operate with the government in formulating such a policy? If they are wise, they will do so. If not, they will have only themselves to blame, when the government some day takes hold of their business with the same gentle firmness now being so painfully felt by the express companies.

THE PROPER FARM BANK

Building Association Plan

Financiers have been coming to understand of late that one handicap that the farmers of the nation labor under is difficulty of getting cash funds at reasonable rates at the needful times to handle their business affairs promptly and economically. They state that the farmers are compelled in some regions to pay as high as 18 percent for working funds. A foundry company can start business, for instance, on a paid-up capital sufficient to erect its plant and turn out some product. It can then go to bank and borrow enough money to keep busy with during the producing season, and when its selling season comes around it cashes up and pays off its note at the bank. The life of these notes is perhaps four months, and the banks are glad to get them. In different lines of manufacturing the working and the selling seasons range thru the entire year, so that as fast as one concern pays off its notes another is ready to take up that money on its own notes. No going enterprise under close competition can afford to do business entirely on its own capital, turning it into product during part of the year and having it lie idle the rest. By the aid of banks several concerns can keep busy the year round on the same identical money.

With the farmer the case is different. For one thing, he turns his working capital over only once a year. Then, his product is more or less perishable unless properly watched over and cared for. He needs capital in the spring to put in his crops, and in the summer and fall to get them harvested and housed. But altho he may have many thousands of perfectly safe dollars invested in his plant—that is, his farm—he can not get a dollar credit on that plant at a national bank. He must get his working capital where he can then, outside regular business channels, or get along without. When he has grain or stock to market he can not borrow money to hold them for a proper price; and yet the buyer can command unlimited cash to take them in. So the farmer is in a sense forced to sell at once, and every fall the banks are called on for a heavy total of ready cash "to move the crops."

Now a legitimate part of the price of farm products to the consumer is the expense of taking care of them until he is ready to use them. The farmer should have the equal opportunity to earn that money if he cares to. Yet unless he has accumulated money enough to hold it on his own funds he is forced to sell just when every other farmer is selling; and the peculiarity of the case is that the very product that was worthless in the farmer's hands as security for borrowed money becomes first-class security in the buyer's hands. Therefore it is the buyer who bides his time for a rise.

For the most part, in Pennsylvania, conditions are not oppressive; but the evil exists, and in the solid grain-growing regions further west the strain is often acute. In looking about for a remedy the financiers have been taking notice of two German methods of co-operative money lending; the Landschaft and the Raffheisen system. Expensive commissions have been sent to Germany to study each of these in detail. The general conclusion seems to be that neither of them is exactly fitted for adoption as such in the United States, partly from their nature, partly because they are not in accord with the American temperament.

But we have an institution in this country that has been working smoothly and successfully for many years that with a little modification to meet the special conditions would solve the whole difficulty. I refer to the Building Association. Nowhere—not even in Massachusetts, its native home—has it done more efficient work than here in Pennsylvania; and thousands of wage workers own their homes in the towns and cities who could never have done so except for its aid.

The principles are simple. A hundred men form an association and subscribe for one share each. Once a month they meet for an hour or more, and each pays in one dollar toward his share. Other corporations begin with paid-up stock in order to do business. This one has for its whole purpose the paying up of the stock. When there is $200 in cash on hand for each share of stock it winds up and divides.

The first night they meet they have a hundred dollars on hand. This might be laid away awaiting more; but the practice is to turn it over to one of the members on satisfactory security, the member agreeing to pay interest on the part of his share that is so paid off until the others get their money also. The security is in fact not for the return of the $100 later, but for the continued and regular payment of the monthly dues and interest. If that payment is kept up there comes a day when the others have received theirs also, and the security is cancelled without any further payment of any kind, and returned to the giver.

If there were no interest, and maturity depended wholly on the dollar a month paid in by each, obviously it would take sixteen and one-third years to pay up all the shares. But interest is paid in monthly on all that has been collected and paid out; and so virtually is compounded twelve times a year. When working rightly the treasury should be emptied by the close of each meeting, the interest being loaned out along with the payments. This interest accumulation shortens the time to maturity, and lessens the number of payments; so that the association winds up usually in 8 to 12 years, the "borrower" having paid about $200 and the non-borrower getting his $200 by the payment of some $60 or $70 less.

Now one peculiarity of the case is that whereas this association may be made up of members no one of whom could go to a National bank and borrow a dollar on his farm, the association itself could get funds there at need. Again, there are many people with regular incomes who very much like this form of investment but who have no intention of borrowing. They put their money in for others to use, and are satisfied with the savings fund feature and the percent of interest. A building association then, in addition to its own funds could command other money at a pinch, and help needy members over their tight places.

As stated above, some modifications of the laws would be necessary in order to adapt the system to farm requirements. To be practicable for poorer men the payment of dues and interest monthly might have to be changed. Monthly payments might be no hardship to the milk shipper, and an unsuperable obstacle to the grain grower. It might be needful for the association to establish a warehouse or elevator for the proper care of produce under its own eye before even temporary loans could be made on that class of products. Other things will occur to the thoughtful. But the essence of the system is just what the farmer needs, and it should be worked out into practical shape.

The safety of its investments depends, and the laws of this state require, that such an association be a purely local affair. The members should have every opportunity to know each other and each other's circumstances; and the investments are intended to be practically under the eye and judgment of all the members all the time. By pooling their little contributions they help each other, and the association as a whole can command bank loans on which it will make no profit but which may save the farm life of some members; and each member is the final judge of the sufficiency of the security pledged to the association.—C. H. Darlington, Chester Co., Pa.

PENNSYLVANIA FARMER
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Philadelphia, Pa., June 20, 1914.

Good Roads Day The story of the inauguration and results of the Washington County Good Roads Day, told on the first page of this issue, should be used as the basis of a similar movement in every county of the state. There is no single feature of county or community development of more general interest and value than the public roads. There is no one asset of a community on which all citizens are more mutually dependent than the roads. Any effort at their improvement is working for the common good. It may be urged that a spasmodic effort, lasting but a single day in the year, is a waste of time and energy. But a county that is thoroly aroused by a one-day campaign is not going to be indifferent to the condition of its roads during the rest of the year. There is an influence in such campaigns that is bound to make itself felt not only on the roads but on the public officials who have the roads in charge thruout the entire year. Best of all, such road days enable the farmers to press the importance of improvement of all the roads, the earth roads in which they are vitally interested as well as the main-line roads which receive greatest attention from the town and city travelers. The big road problem in this state, so far as farmers are concerned, is in the earth roads, and every movement looking to the improvement of these roads is worth while. Let there be more Road Days.

Automobile License Fund The Dauphin County Court on June 8 handed down a decision releasing to the state highway department the automobile license fund now amounting to approximately one million dollars. This should end the controversy long existing between the state auditor and state treasurer on the one side and the "administration" on the other as to the disposal of this fund. The entire controversy has been a case of playing politics, made possible by the carelessness of the last session of legislature in so wording the appropriation clause as to leave question of conflict with the specific appropriation act of 1909. There was never a doubt of the intent of the legislature to appropriate the license fund to the use of the state highway department. The hitch came on a technical point involving the legal right of the auditor and treasurer to honor and cash the requisitions drawn by the highway department under the loose wording of the appropriation law of 1913. This legal point should be satisfactorily removed by the late court decision. There is talk of an appeal from the decision by the auditor. There can be little excuse for such action at this time. It is only fair to state that because of general dissatisfaction with the administration of the highway department, public opinion in the state has tended to support the claim of the auditor and treasurer in withholding these funds. At least there has been little general criticism of a parley, admitted to be for political effect, which interfered with placing additional money in the hands of a department which has shown little ability in making good use of its appropriations. But there is a limit to public patience which is as apt to be felt by the warring officials as by the road department. An appeal of the case will be carrying politics a step too far. The highway department has been urging the retention of this fund as an excuse for its inefficiency for months. It has served well as an excuse, but the condition of the state roads demands immediate attention, and responsibility for further delay will be placed where it belongs.

High Priced Breeding Stock The sale of a Holstein bull calf for $20,000, as noted on page 7 of this issue, probably establishes a record in price for a young breeding animal in this country. Records of production and records of prices in dairy cattle are following each other so rapidly in recent years that nothing surprises. The payment of $20,000 for an immature and untried sire is an indication of the value which progressive breeders place upon a sire of promise. It also indicates the chances which breeders with money are willing to take in the hope of securing an animal of especial merit. In the sense of buying actual, demonstrated value, this recent purchase is a gamble. The purchasers are risking their money on the chance that a law of breeding will hold true in the case of the animal purchased—that like will produce like, and that the youngster combining the richest blood in the Holstein breed will be able to transmit the valuable characteristics of his ancestors to his offspring. It is such a chance as men of means are taking every day in other lines of business, and if King Segis Pontiac Chicago carries the qualities of the illustrious families represented in his breeding to his offspring, he will be well worth the money and the risk. But the purchase is nevertheless a gamble, a chance, and the practical dairymen and breeders of modest means can not afford to take chances. The time of purchasing herd sires on breeding alone is largely past for the practical dairyman. The combination of rich producing blood in an animal is a promise but by no means a quarantee of value in the individual, and the breeder or producer who wants to buy on safe ground will purchase the sire of mature years and proven worth. The promise of ancestry is sufficient for the big breeder, but the proof of offspring is much safer for the man who must get full value from every dollar invested.

DEDICATION OF HORTICULTURAL BUILDING AT STATE COLLEGE

Fifty-fourth Commencement

The new $120,000 Horticultural building was dedicated at State College, Pa., June 10th, with appropriate ceremonies. In a brief sketch, Dean R. L. Watts called attention to the importance of the various horticultural products of the state as reported in the 1910 census. It was a matter of surprise to many of the audience to learn that the vegetable interests represent a value of approximately the same as all the fruit crops put together. The figures show that vegetables that year had a total of $10,013,920 and the fruit $10,691,679. Flowers, plants, nursery products had a total of $4,344,450. The total value of horticultural products of the State, therefore, is $25,050,049 as reported by the census. On the basis of the value of the horticultural industries of the State, the investment in the horticultural building at the College is thus seen to be less than one two-hundredth.

PROF. M. G. KAINS ADDRESSING GATHERING AT DEDICATION OF NEW HORTICULTURAL BUILDING, PENN. STATE COLLEGE.

Mr. C. J. Tyson, President of the Horticultural Society of Pennsylvania, discussed the development of horticulture at the College and pointed more particularly to the wonderful growth made in accession of students. The total enrollment of students in the School of Agriculture during the past decade has increased fifteen times and that of students enrolled in the various courses of horticulture more than twenty times.

A beautiful pastel portrait of Gabriel Heister, a graduate and a former trustee of the institution and formerly president of the State Horticultural Society was presented to the College as a gift of the Crab Apple Club. D. H. Stewart, the president made the presentation. Mr. Bruce W. Bell presented, in behalf of the Landscape Gardening Department, a portrait of Frederick Law Olmsted, the greatest American landscape gardener.

In a brief address the new Head of the Department, Professor M. G. Kains, sketched the potentialities of Horticulture in Pennsylvania. He pointed to the development of the industry from nothing at all a century ago to the present commercial valuation referred to by Dean Watts. Based upon the fact that the native small fruits have been developed in this period from the wild state to their present prominent position, and that a century ago practically all of our tree fruits were chance seedlings, showed that the potentiality, with respect to literally hundreds of other species are as yet untouched. In closing he pointed to the fact that the underlying laws, whereby present development has been reached, will apply without limit to all of our present list of cultivated fruits and to hundreds of wild species worthy in importance, demand alone being the governing factor.

Professor F. A. Waugh of the Massachusetts Agricultural College delivered the address of the day, "The Arts of Peace." He drew a pen picture of war, its horrors and frightful expense, not merely in money, but in destruction of human lives and of business. Then he contrasted agricultural industries, showing the constructive nature of all lines of agricultural effort.

The college this year graduated the largest class ever turned out at the institution. There were 332 graduates from the various departments. Governor John K. Tener made the commencement address.

U. S. CROP REPORT---June.

The U. S. Crop Reporting Bureau in reporting crop conditions on June 1 indicates prospects for bumper crops of grains and hay. Winter wheat shows a condition indicated as 92.7 percent as compared with 83.5 percent last year and 80.3 percent, the 10-year average. Oats condition is rated at 89.5 as against 87 percent a year ago; rye, 93.6 against 90.9 last year; hay, 88.7 compared with 87.5 a year ago and pastures 89.8 compared with 89.2 on the same date last year. Basing estimates of yields upon present indicated condition, all of these crops should make record yields. With an acreage of winter wheat 11.6 percent in excess of last year, it is estimated that the total production in 1914 will be close to 638,000,000 bushels as compared with 523,000,000 bushels last year and a 5-year average of 441,000,000 bushels. The oats crop is estimated at about 1,216,000,000 bushels as against 1,122,000,000 a year ago. General crop conditions on June 1 in the Middle Eastern states, 100 representing the 10-year average, are given as follows: Pennsylvania, 105; New York, 100.6; New Jersey, 102.9; Delaware, 103.9; Maryland, 106.4; United States, 102.2. The condition of the various crops on June 1, expressed in percentage of their 10-year average (not normal) and the average producers' price for the country on June 1, are as follows:

Crop	Condition	Farm Price
Wheat	114.7	$ .844
Apples	110.8	.....
Alfalfa	108.6	....
Rye	104.3	644
Peaches	104.2	....
Hay	101.5	12.34
Oats	101.	.40
Pastures	99.8	
Clover	95.	

STATE CAPITAL NEWS

Cultivation Statistics. — Work has been started by the new Bureau of Statistics of the Department of Agriculture to ascertain what percentage of owners are tilling their own farms and the general run of sizes of the farms which are tenanted as well to gain information concerning the character of leases. This bureau is just closing up a census of run-down or disused farms. It has been demonstrated by a canvass of each county that every owner of a farm, no matter how run down it may be has very clear ideas about its value and that there are none without owners. In some counties a dozen or so have been turned up whose owners have given up cultivation or have failed to get a tenant. These farms, with buildings going to rack and ruin and fields being overgrown with weeds and noxious plants, are not uncommon in some sections of the state and just what a nuisance a farm of that character may be is well known. The object of the listing is to show where agriculture can be taken up again in this state. The study of ownership and tenanting is being carried on as a supplement to this first investigation because it will show how in some parts of Pennsylvania farms have become garden spots and what can be done to improve conditions in other portions.

Listing Creameries, etc.—State officials are making an effort to supplement the list of farmers of the state by obtaining first hand information about creameries, condensers and canners. One of the greatest complaints about the state government's work for agriculture has been that there was a dearth of reliable information about farms, farmers and the various lines in which they are interested. The division of horse breeding has for some time past been publishing lists of stallions and their owners' addresses together with registered stock and the division of zoology is working out a card index of every orchard in the state and specialty. Now there is to be provided a directory of creameries and canneries which will furnish information as to the easiest way of reaching these consumers of farm products. Statistical information about milling and cheese making enterprises has already been collated.

Leeway On Butter.—Within a short time the state authorities will publish a schedule of what are known as tolerances on various commodities. This schedule will show how much leeway is to be given on various things such as butter, which are liable to shrink.

Awaiting Decision.—State Game authorities are waiting to see the outcome of the automobile license fee controversy as the basic principle in appropriation of this income is about the same. The Dauphin County court held that the motor vehicle license act provided for using the automobile license money for road repair and the auditor general and state treasurer will decide whether to contest the case in the supreme court. Meanwhile the Highway department is preparing to begin repair work and if an appeal is taken efforts will be made to make it of such a character that the use of the money can be had for road repairs while the court is acting on the question. The State Game authorities, who are held up in reimbursing counties for scalps of wild animals and in carrying on their game propagation, are eagerly awaiting determination of the question inasmuch as counties have been informed that they must pay for scalps and look to the state for reimbursement.

The Growth Of Automobiles.—As an indication of the manner in which the use of motor vehicles is spreading it may be stated that up to date 84,500 pneumatic tired vehicles have been licensed and 7,300 with solid tires, the latter including trucks. Motorcycles now number over 11,500. It would be interesting if it could be learned how many of these cars are owned by farmers.

Prison Labor.—A conference is to be held here later in the summer to draft a proposed act to permit use of prisoners in county jails on roads. The work would be under direction of road authorities and the men would work for the public and not for contractors.

NEW JERSEY FARM NEWS

Grain And Grass.—Corn came up fine. A bumper crop is predicted. Wheat and rye are almost normal. Because of the early drouth hay will be short. except upon these fields where nitrate of soda was used. Recent rains have produced abundant pasturage, insuring, for a time at least, a good flow of milk.

The Tomato Outlook.—The outlook for a bumper tomato crop in the central and southern portions of the state is said to be fine. This is remarkable in view of the fact that a considerable part of the acreage had to be re-planted because of unfavorable weather conditions and also the havoc wrought by cut worms. The report comes from the South that the crop there will be late, owing to cold nights which may bring both crops on the market at once, altho some farmers say that the acreage North is below the average. The large profits of a tomato crop come when the product is marketed early, when as high as $2 to $3 per basket is secured. There is good money in tomatoes at $1 per basket and it is a paying crop at 50 cents a basket, and even at 25 cents a grower would not go bankrupt. The demand for tomato products seems to be steadily increasing, and every year canners demand more of this vegetable.

A Great Project.—The Campbell Soup Company of Camden, has purchased a tract of 2,000 acres of land on and around the site of Washington Park, which will involve the expenditure of millions, including a model town, equipped with homes of the most sanitary type and facilities for the moral, mental and physical uplift of 4,000 or more employees of the company. On July 1, ground will be broken for the erection of a four-story re-inforced concrete factory, which will cost approximately $2,000,000. The plant will have 34 acres of floor space and will be the largest canning factory in the world. As contracts will be made with New Jersey farmers, insofar as it may consistently be done, for the supply of vegetables, great impetus should be given to the production of such crops.

The Irrigation Question.—Last year the New Jersey experiments with irrigation were encouraging, as a result of which irrigation systems are being operated this spring on nearly twice as large an acreage. Farmers who have irrigation plants in operation declare they have proved so successful that the outlook is for still greater extension of this system of crop saving next year.

MARYLAND NOTES

Strawberries Abundant. — One Wicomico County grower recently gathered from one acre over 2,000 quarts of strawberries at one picking. May 27 there were 27 car loads of berries shipped from Pittsville. The yield has been good, altho the second picking was affected by the drought.

Crop Prospects.—The apple prospect is unusually good, but the peach crop is not so promising. The crop of crimson clover has been harvested and is the best ever had in the county. Farmers are talking about increasing their number of cows owing to the fine hay yield. Some farmers have housed from 75 to 150 tons. Much of this clover land has been plowed and corn planting on it has commenced. This will produce an abundance of fodder as well as a corn crop. The farmers are progressing and find out cattle help crops as well as crops help cattle. There is evidence of increasing fertility of many farms in the county.

Saved The Cantaloupes.—In Kent County a number of cantaloupe growers this season used ordinary paper drinking cups for covering the plants nights when there was danger of frost. This it is claimed will permit them to have a crop ready for shipping ahead of the regular way.

Alfalfa in Harford Co.—Harford County is waking up on alfalfa. One grower has alfalfa that measures 4 feet in height. He has for several years gradually mixed some alfalfa seed with other seed sowing and has his land now well inoculated.

Fruit Prediction.—Orlando Harrison recently stated that the yield of apples, peaches and other fruits in this state this year will exceed any other recent year. The only danger he said is twig blight.—G. O. B.

COUNTY NOTES

Bedford Co., Pa., (S.C.) June 9.—Hot and dry, with occasional showers. Demand for horses and cattle light. Wheat selling at 90 to 95c bu. Fruit prospects good for apples and plums. Strawberry crop fair, selling at from 12 to 15c qt. Corn and oats are looking good, but several weeks late, on account of wet spring.—N. F. Richards.

Venango Co., Pa., (N.W.) June 8.—First part of May cold, balance of month dry and warm. Live stock doing well. Spring planting about done. Apples, wheat, rye, and grass looking fair. Acreage of oats and corn below normal. Potato acreage above normal. Butter, 25c; eggs, 25c; potatoes, $1 bu. Farm work still behind. Haying will be here before the farmers are ready for it. General conditions fairly good. —W. J. Pringle.

Lancaster Co., Pa., (S.E.) June 8.—Warm and dry. Some sections have been visited by thunder showers. Most sections too dry for growing crops. Live stock is in good condition. Cows are doing well on pasture. Fat cattle are being put on the market at good prices. Wheat has made a good growth of straw and is well headed but some fields are badly damaged by Hessian fly. Clover fields are doing well but timothy will be short unless we have a soaking rain soon. Potatoes and oats are doing fairly well. Corn came up well, but much damage was done by wire worms. Some fields were replanted. Tobacco farmers have begun planting. Farmers are busy harrowing corn and potatoes and getting things ready for haymaking and harvest.—J. Henry Haverstick.

Harford Co., Md., (N.E) June 5.—Dry and dusty; very little rain fall. Live stock continues high. Fat cattle, 7½@8½c lb.; fresh cows $75@100 each; calves 9c lb. Wheat looking very good. Clover hay fairly good but timothy will be short unless it rains soon. Corn up and growing good. Farmers working corn and setting tomatoes. Some using water; others waiting for rain.—D. G. Harry.

Chester Co., Pa., (S.E.) June 2.—Clear and dry. Corn high; horses not so high. Wheat affected by fly. Timothy and clover short and not so promising as at first expected. Potatoes and corn are growing nicely. Much corn was planted later than usual. Ground becoming dry which may affect hay crop.—Hayes C. Taylor.

Chautauqua Co., N. Y., (S.W.) June 4.—Weather generally fair and warm; been quite dry, raining now. Live stock in good condition. Horses quite high, $125 to 250; cows, $50 to $75 for common, $75 to $100 for extras; dressed pigs, 10½c; fowls, live, 15c; eggs, 19@20c; asparagus, 75c dozen bunches; strawberries, 12c; butter, 22 to 24c. Farm work a little behind on account of being wet early and then very dry. Crops looking well. Apples, cherries and berries promise well.—J. L. Barber.

Steuben Co., N. Y., (S.W.) June 1.—Weather hot, with frequent showers. Live stock of all kinds is scarce and high in price. Pastures are good. Sowing over. Most all corn planted. Preparing for ensilage corn and potatoes. Farmers are very busy. Farm work is much behind on account of wet weather in April and May. Butter, 28c lb.; eggs, 19c dozen.—Geo. W. Rowley.

ATLANTIC
AUTOMOBILE
GASOLINE

Gasoline C. P.

The chemist asks for no guarantee upon his supplies other than the letters C. P., meaning "chemically pure." For gasoline, the symbol C. P. is not used, but the name *"Atlantic"* on Gasoline affords the motorist, and the farmer who owns a gas engine, just the same grounds for confidence that "C. P." does the chemist.

Forty-eighty years of experience and manufacturing resources have combined to set a distinctive quality standard for ATLANTIC AUTOMOBILE GASOLINE.

Our distribution service is the best in the State. Our tank wagons will deliver regular supplies of first quality engine fuel right to your door. Ask for it by name at any first class garage—"Atlantic Automobile Gasoline."

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Modern Interest in Housekeeping.

Modern housekeeping is confronted with some problems that are like those in modern farming, notably so in labor and machinery. The housekeeper must reach a decision in regard to the degree in which it is possible and desirable to supplement or replace manual labor with improved implements. She must decide whether or not she will adopt scientific methods in home management. The housekeeper is confronted with the difficulty, almost the impossibility, of securing help in carrying on her housekeeping routine, even in emergencies. When serious illness comes to the farm home it often happens that the only way in which the added labor can be met is by securing a nurse to take care of the sick person while the house mother continues in the routine work; even when she is fully competent to manage the sick room she finds it impossible to do so because she cannot hire a housekeeper's helper, while she can hire a nurse.

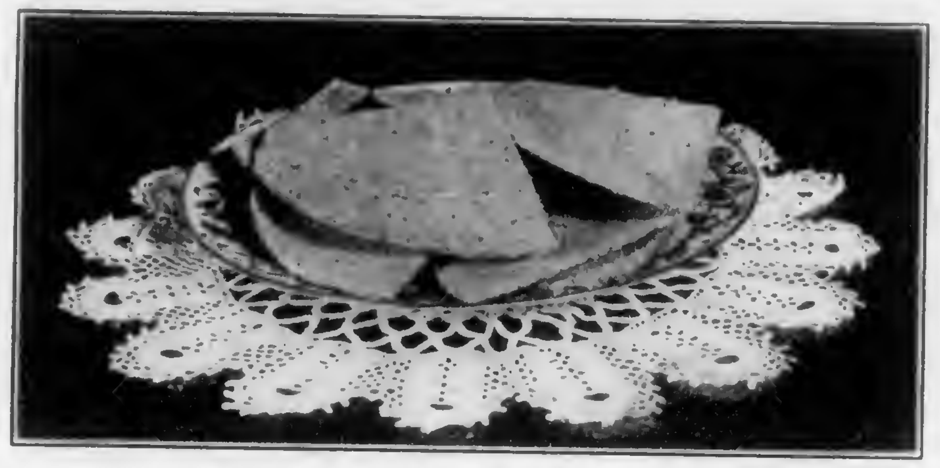
When everything is going well with home affairs, no illness nor any stress of circumstances, many women find something distasteful about having an alien personality in the home; they greatly prefer having just their "own," and it is they who welcome the new housekeeping which enables them to get along comfortably without extra help. Also they find that the new system and the new devices which reduce labor will at the same time create a demand for sustained mental energy that in turn begets a new and lively interest in the business of housekeeping.

Every device that lightens labor costs a double price. In addition to an expenditure of money to buy it, there is required also an expenditure of intelligence in order to use the device properly. It is the latter that explains the increasing interest in housekeeping which is in plain evidence among the better class of home makers. The new housekeeping recognizes two plans of advance; the first is the plan of putting out of the house whatever work can be as well or better done by an organized commercial agency; the second plan is that of securing the best equipment, using the best formulas or recipes and practicing the best system suited to the particular household.

In line with putting work out of the home, in many sections the making of butter at home is practically abandoned. While undoubtedly the best home-made butter is far better in quality than any creamery butter can possibly be, yet the facilities present and the labor available in most cases are such that the sale of the milk or cream and the purchase of butter is in practice satisfactory. In the same way the home butchering of hogs, the rendering of lard, the curing of meat, has given place to the plan of selling the hog on foot, and buying whatever form of fat or meat is desired. The steam laundry takes excellent care of the heavy portion of the family washing and will return the flat pieces clean and smooth at a cost of about 5 cents per pound. Putting bread making out of the home is a debatable point. Certainly the old 24-hour process that began with the troublesome potato sponge and ended with uncertain results often made bakery bread preferable. Many progressive housekeepers, however, are now quite willing to give the 20 minutes of labor required for the making of four or five loaves of bread in order that the family may have palatable and nutritious home-made bread; they are willing to do this and can do it regularly all the time because dependable yeast can now be had, we have ovens that can be controlled, and a dependable short process formula for making bread is available. Consequently it may be desirable sometimes that the plan of putting work out of the house should give way to the plan of having good equipment and using the best methods.

Putting work out of the home has been coincident with selling produce outright and of independent buying. The housekeeper no longer exchanges eggs and butter as she formerly did, the farmer no longer exchanges wheat for flour. Independent buying gives the opportunity for making a wider selection of foods without in any degree adding to the cost of living. The housekeeper now generally buys the standard flour and in addition pastry flour, graham flour, buckwheat and corn meal, each of which, when handled properly, contributes to variety in palatable and nutritious forms of food. Variety is an essential factor not only in the matter of promoting health but also in promoting an increase of interest in planning and preparing meals. Monotonous repetition is avoided and while there is no increased price there is an increased value when the housekeeper seeks knowledge of how to use a wide list of foods. By the way a new device for saving time and labor is found in a late bulletin issued by the Department of Agriculture on "Corn Meal and Its Use." Mush, which is so very good in its first state and much better in its second, as browned in fat, may be made without stirring by using cold water and corn meal in the proportions of 3½ cups of water to 1 cup of meal, and heating very gradually, then cooking in a double boiler or fireless cooker for 3 hours. Having made mush without lumps by the directions given in this bulletin we consider it a real contribution to the list of labor-saving directions.

The alert and interested housekeeper uses the help which now is so generously offered in the bulletins issued by the Department of Agriculture and the State Universities that have Departments of Home Economics. There is found encouragement and inspiration in the work of others who, with training in research and experiment, are now offering the demonstration of what science has to contribute to efficiency in the business of housekeeping. It is deeply gratifying to witness the building of a great body of literature around the science and art of useful, everyday, household cookery. — Mrs. Virginia C. Meredith, Wayne Co., Ind.



WHOLESOME AND APPETIZING OATMEAL CAKES.

OATMEAL CAKES.—Put 1½ cups of fine oatmeal into a bowl, add 1 tablespoon dripping and ¼ teaspoonful of salt. Pour on a little boiling water, and stir with a knife until the dripping melts, then stir into the meal until all is moistened, but it must not feel soft. Turn out on to a baking board, roll out until a nice thin cake is formed; then divide into four, and bake on a hot griddle. Toast the top side over the fire or in the oven.—Marion Harris Neil.

ONE FARM WOMAN'S GARDEN PROFITS

Most farm women can find use for money they can earn themselves for there's always some article or perhaps several articles they are longing for. It may be rugs or curtains, a piece of furniture, clothes for themselves or for their children.

This article will tell how one farmer's wife met this problem. She is as busy as any farm woman but manages to get the time to care for the crops which supply her some needed money.

She has a small garden 19 feet wide and 22½ feet long, from which last summer she sold $8.50 worth of lettuce and $20 worth of endive. The lettuce was planted as early as possible in the spring and sold for 40 cents a dozen bunches. A bunch is as big a handful as one can hold in one hand and tie without assistance. This makes an extra large bunch, much larger than the bunches made in trucking centers, but it is the size demanded in this locality.

As soon as this lettuce crop was off the ground was worked up with hand cultivators, and a second crop sowed. Had this matured it would have brought thirty or forty cents a dozen bunches as the main crop of lettuce was gone, for there is a limited local demand for lettuce in July and August. The main crop of lettuce comes into market here in June, then the bottom simply drops out of the prices, and 15 cents a dozen is a very good price then. But as her crop is marketed before the 31st of May she is never forced to take such a low price. But by July no one has lettuce and that's the time to rush the second crop to market. That was what the second crop was planted for but the goslings found it when it was nicely up, and in a short time there was no lettuce visible. After putting the goslings where they couldn't reach the garden, it was again worked up, and endive was planted, but one day the young chickens got in and made short work of it. However, this woman determined that she just would get another crop from that garden, so it was prepared for planting right away and made secure from the chickens.

Endive was sown again and matured in a surprisingly short time. It was planted in August, and by the middle of October the endive had all been sold but it is also a quick money crop, for in six weeks some of it is fit to sell. And it also pays better than lettuce. The price of endive is the same as that for lettuce, 40 cents a dozen bunches in the local towns. There is a big demand for endive from Germans and Italians, the latter at all seasons.

As to growing endive, this is the way it is done. After giving the ground thoro preparation sow the seed thinly in drills 12 inches apart. As soon as the crop appears, commence cultivating. When the plants are large enough thin to a plant every 8 inches. With this method it is necessary to blanch either by boarding as for celery, or by tying the leaves up. Set 4 inches apart the plants will blanch without trouble but the heads do not get as large as they should. Frequent cultivation makes it grow fast.

The bugbear of weeding is overcome with lettuce or endive. There are few Americans, even among truckers, who know what endive is, and there are still fewer who know how to grow it. The first year over $20 worth of endive was sold, and this year, with the help of a crop of onions over $100 was realized from this little garden. This woman has had this garden for years, but the first time she ever got a decent sum from it was three years ago, when she raised celery after an early crop of lettuce. And it was just because she had not looked over the demands of the region, and then fitted her capacity to the opportunity.—M. A. Herold, Luzerne Co., Pa.

PEANUT BUTTER USES

I use a great deal of peanut butter in my family, as we are very fond of it, and find it a valuable article of food. As a rule I make it myself, making a small quantity at a time, so as to have it always fresh. It keeps well however, in cool weather, or on ice in summer, but any food containing so large an amount of oil should not be kept near other food unless closely covered, for it absorbs odors readily. I always buy the salted peanuts to make into butter, for several reasons: First, the cost is little if any more, as we can buy the finest salted peanuts for 15 cents by the single pound, or less in quantity. Second, it saves the trouble of shelling them, and the extra cooking received in the salting process improves them greatly for making the butter. The salt in them is usually the right amount to salt the butter properly. All the loose skins should be thrown out, but some should remain to add to the rich color of the butter.

I have a peanut butter attachment to my food chopper, which makes a very fine-grained, smooth butter which I pack solidly in glasses which can be closely covered.

For ordinary use I add nothing to the butter, but if it does not spread well, I thin it with a little milk or melted butter as I use it. Many people add a generous proportion of butter or olive oil, but it seems rich enough for most purposes as it is. High pressure in grinding the nuts brings out more oil, so those who have a regular grinder will find the finished product much more oily than when prepared with a food chopper. If the nuts are very fresh, they will make a much smoother butter, so it is well to heat them gently before beginning the work.

Sandwiches.—I use the peanut butter, thinned with a little milk on bread or delicate crackers, for plain sandwiches, or spread one slice of bread with the butter and the other with finely minced figs or dates and put them together. Suit other fruits to taste.

Peanut Butter Milk.—Invalids or those who think they cannot drink milk will enjoy this substitute: Thin peanut butter with boiling water till of the consistency of milk or part milk can be used. Drink while hot. This is as good a remedy for insomnia as the glass of hot milk so often recommended.

Toasted Peanut Sandwiches.—For breakfast toasted peanut butter sandwiches are very good. Cut bread very thin, spread with peanut butter, and after placing two slices together, toast on both sides in the usual way. A more elaborate meal can be prepared in this way: After the sandwiches are all made, roll them in beaten egg, then in bread crumbs, and fry to a delicate brown on both sides. This can be done either in deep fat or they can be sauted in a little fat in the frying pan. For this use spread the peanut butter thickly, using an ordinary glass for a dozen slices of bread.

Peanut Butter Gravy.—This is a good substitute for meat gravy, and is made in this way: Add 1 rounding tablespoonful of the butter to 1 pint of boiling water, rubbing until the butter is dissolved. Thicken with browned flour made into a smooth paste with water. If onion is liked, a little can be added to the gravy.

Peanut Butter Pie Crust.—When making pie crust, try using part peanut butter instead of all lard. I find one-fourth about the right amount. It makes a delicious crust of nutty flavor, and is especially suited to apple pie.

Peanut Soup.—Use one pint each of milk and water, and when boiling add 1 heaping tablespoonful of peanut butter dissolved in a little warm water. Season well with celery salt, a little onion or tomato to suit the taste, and rice may be added if liked. The amount of peanut butter used in the soup should be varied to suit one's taste. We often prefer more than these directions call for.

Peanut Butter Potato Puffs.—These are good for supper. Use 1 heaping tablespoonful of the butter dissolved in a little warm water, add 1 beaten egg, 1 pint of mashed potato, and salt and pepper to taste. Bake in well-greased gem tins until nicely browned and serve hot.

Peanut Trifles.—Mix smooth, 2 rounding tablespoonfuls of peanut butter, 1 cup sugar and 1 cup flour; then add 2 beaten eggs and ½ teaspoonful baking powder, drop by small spoonfuls into greased baking tins, and bake golden brown.

When stuffing dates, use peanut butter for part of them, mixing 2 tablespoonfuls of it with 1 of powdered sugar. If too stiff, add a little milk, roll to the size and shape of the date kernel, and stuff into the date, afterward rolling in powdered sugar.—Mrs. H. M. Woodward, Winnebago Co., Ill.

The New Belts.

By Our New York Correspondent.)

Belts are certainly "different" this year. Any neat, narrow one you may have left over from last year may as well be discarded with the trim linen shirt waist to which it belongs. This year women care nothing at all about having figures, only so they do not have too much of them.

The "vestette" (No. 1) is the new summer belt. It is usually made of very rich brocade, in strong colors. The buttons and imitation pockets are usually black or at least the color of the background of the brocade.

No. 2 is still wider, and comes well down over the hips. It is frequently of pique or heavy linen, and the pockets and buttons are the real thing.

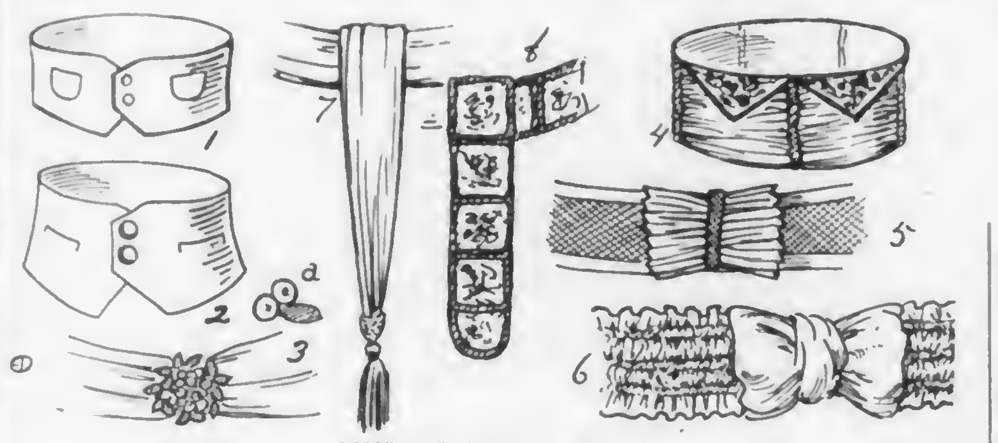
A soft crushed-silk girdle, four or five inches wide, intended for dressy occasions, is shown in No. 3. The beauty of the cluster of silk buds and leaves that finished it was more than three-fourths of the whole effect. The girdle was a soft pink, and the buds were several shades of blue and dull green, with now and then a soft dull red, all contrasting agreeably with the silk of the girdle. The detail (a) shows the method of making the buds. Small balls of cotton are covered with silk, then a black cross stitch of silk thread is placed in the center of each bud. For directions for making rose buds with petals see our issue of May 2.

A wide soft girdle, supported by several lengths of featherbone, over which it is shirred, is shown in No. 4. The beauty of this girdle is in the point of striking embroidery dropping over its top edge. These may be scraps of oriental [illegible], and may be limited to the two in front, or they may go all around the girdle, and be embroidered in the colors of the costume to which they belong. They are pretty conceits for using bits of handsome embroidery or lace that one may own.

A pretty belt, five or six inches wide, was made of plaided and plain silk, as indicated at (5). If preferred the arrangement of materials could be exactly reversed.

A charming girdle for a slender waist is shown at (6). It was made of soft silk, and shirred over three bands of rubber tape, leaving a 1½-inch ruffle on either side for a finish. A large soft crushed bow of the material was used to cover the fastening in the back.

Long ends are very popular, or rather one long end. No. 8 shows a very effective girdle of silk embroidered heavily in squares, giving the effect of squares of oriental work set together. The long end shown at (7), finished with a tassel, while not so distinctive, would be much simpler to reproduce. The tassels, with crocheted caps to fit over the end of the ribbon, can be had in any store, but they are not hard to make by one who can crochet, for the tassel could be very cheaply made from a few inches of fringe.—Ellen Den.



SOME IDEAS FOR BELTS.

PROFITABLE SHADE

That perplexing question of shade to protect the kitchen windows from the intense sun rays comes to every housewife's mind with the warm spring days. What to plant, what variety of vine, is what concerns her most. A canvas awning is efficient, but it prevents the free circulation of air while vines to a great extent do not.

Last summer I decided to plant a vine that would give both shade and profit. I soaked a few ordinary soup beans in water over night and planted them under the kitchen windows. When they began to run I trained them to the top of the sash. Those vines were profitable in beans which we ate with relish and the vines kept out the sun. Later in the season, I built a square frame arbor a few feet outside the kitchen door; ten feet high, ten wide and twenty long. I sowed lima beans and soup beans on the sides and soon we had a fine vine-covered outside kitchen where the women worked or sat to sew on the hot, sultry days. I'm sure if each housekeeper will try either the arbor or growing the vines up the wall, she will be delighted and the family will enjoy the fruit of the profitable shade.—The Country Doctor.

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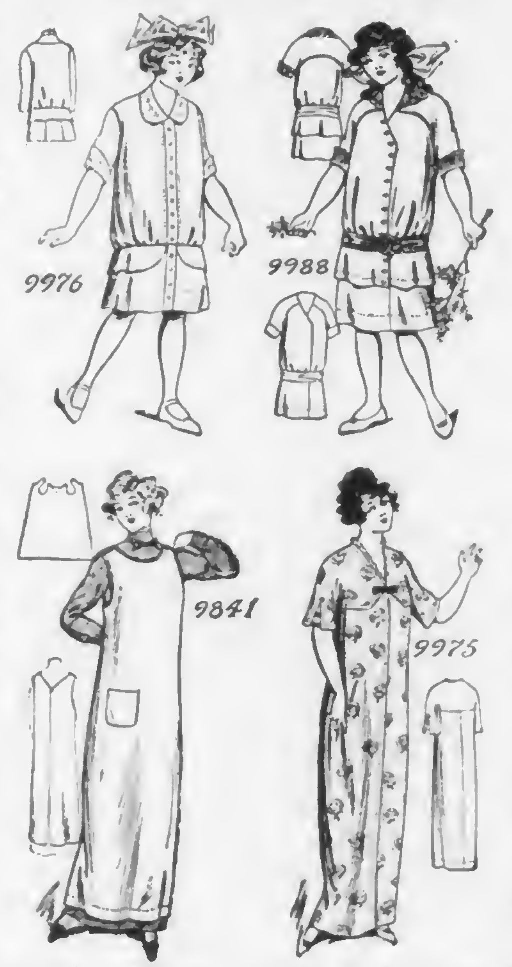
Be sure to give the figures and letters of each pattern exactly as printed at the beginning of each description. We will not be responsible for correct filling of your orders unless you do so. Also give bust measure when ordering waist patterns, waist measure for skirt, and age for children's patterns. Address Pennsylvania Farmer, 214-18 So 12th St., Philadelphia, Pa.

9976.—Girls' Dress with or without Chemisette.—Cut in 4 sizes: 6, 8, 10 and 12 years. It requires 3½ yards of 44-inch material for an 8-year size. Price of pattern, 10 cents.



9988.—Girls' Dress with or without Tunic.—Cut in 4 sizes: 8, 10, 12 and 14 years. It requires 3¼ yards of 40-inch material for an 8-year size. Price, 10 cents.

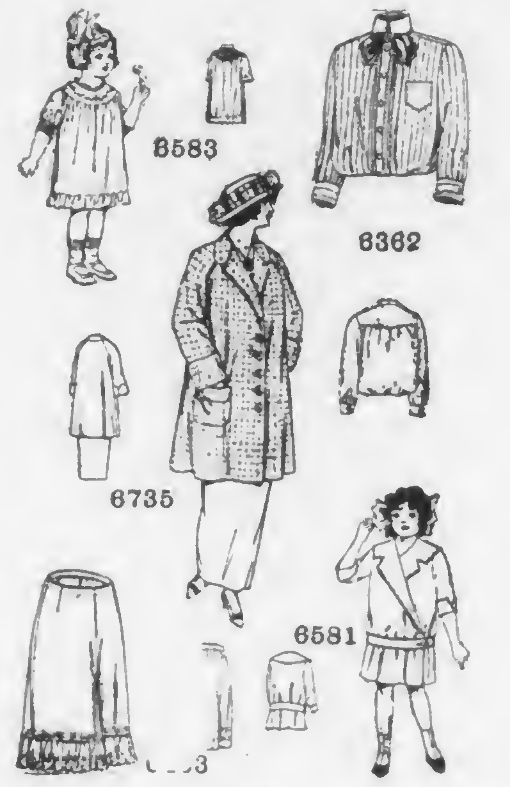
9841.—Ladies' Apron.—Cut in 3 sizes: Small, medium and large. It requires 3⅜ yards of 36-inch material for a medium size. Price, 10 cents.

9975.—Ladies' Kimono or Lounging Robe.—Cut in 3 sizes: Small, medium and large. It requires 4⅜ yards of 36-inch material for a medium size. Price, 10 cents.

6583.—Children's Dress.—Cut in sizes ½ to 5 years. Age 4 years requires 2¼ yards of 27-inch material and 1½ yards of edging. Price of pattern, 10 cents.

6362.—Boys' Blouse.—Cut in sizes 4 to 16 years. Age 8 years requires 1⅞ yards of 36-inch material. Price, 10 cents.

6735.—Ladies' Coat.—Cut in sizes 14 to 20 years. Age 16 years requires 2½ yards of 54-inch material. Price, 10 cents.



6463.—Ladies' Closed Drawers.—Cut in sizes 22 to 30 inches, waist measure. Size 22 requires 2¼ yards of 36-inch material. Price, 10 cents.

6581.—Children's Dress.—Cut in sizes 2, 4 and 6 years. Age 4 years requires 2¼ yards of 36-inch material. Price, 10 cents.

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MR. PRATT

By JOSEPH C. LINCOLN

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SYNOPSIS OF PREVIOUS CHAPTERS

Two New York business men, Van Brunt and Hartley, come to Wellmouth for a vacation. Solomon Pratt, Skipper and village character finds the "twins," as they are dubbed, interesting. The "twins" ask Pratt to find them a secluded place of rest and act as their cook. After a period during which Pratt has some experiences with the "twins" including, helping to rescue a fresh air youngster, in whose protectress Hartley finds an old sweetheart; and a hair-raising voyage back to Wellmouth in which Van Brunt and his "man" are set adrift in the Dora Bassett and Pratt in the dory, accident brings the twins to Horsefoot Bar Island, which they decide is Paradise and for the rent of which they make a "bargain" with Nate Scudder. The present instalment continues the tale of the moving operations to the island.

CHAPTER VII (Concluded.

I carted dunnage all the forenoon. Then I cooked dinner and washed dishes. James was going to help me wipe 'em but Van's clothes had got wet when he was adrift in Dora Bassett and they had to be pressed. So I wiped and cleaned up and carted more dunnage, including stove pipe and blankets and flour and quilts and nails and pork and pillows and a rake and sugar, and the land knows what. Then I cooked supper. And how them Paradise tenants did eat!

"By gad, you know!" busts out Van Brunt with his mouth full; "this is what we've been looking for, Martin. This is getting back to nature."

Hartley grunted, being too busy with a fried mackerel to talk with comfort. But it was easy to see he was satisfied.

They went on bragging about how good it was to cut loose from the fight and worry of the Street. At last, according to Van, they realized that life was worth living.

"No more speculation for me," he says, joyful. "No more fretting about margins. I don't give a continental if the bottom drops out of the market and carries the sides with it. I hereby solemnly swear for the fifth time never to buy another share of stock."

Then he reaches after another half-acre slab of my johnny-cake.

Lord James was upstairs in the sleeping vaults sorting out bed clothes. The sheets and blankets and things was more or less mixed up with the hardware and groceries. I was out in the kitchen getting ready a second relay of mackerel. The dining-room door was open, so I could see and hear everything.

"By the way, Martin," says Van, buttering the johnny-cake, "how did Agnes look? Well?"

"Yes," says Hartley, short.

"She must have been surprised to see you. Did you tell her we were naturalized citizens, or on the road to it?"

"No."

"No? Why not? She probably thinks that we're down here organizing another syndicate. For a girl whose mother is of the world worldly, Agnes has developed queer ideas. I suppose I ought to go over to see her," he went on. "You said she had another girl with her. Who is it?"

"Margaret Talford."

"Talford—Talford? One of the Newport Talfords? Oh, I know. Pretty little girl, dark hair and brown eyes, and—and a way with her?"

"I guess so. Very likely. I haven't seen her."

Van seemed to be thinking. "I'll go over tomorrow," he says.

Then he commenced to whoop for more mackerel and 'twas time for me to load up the platter. I thought I'd cooked supper enough for six men, but when the Twins got thru I had to fry another ration for me and Lord James. Eat! I never see such sharks in my life.

When they'd finished everything on the table except the knives and forks and the dishes, the Heavenlies went outside to smoke cigars and promenade up and down the beach. His Lordship and I set down to have a bite ourselves.

"Say," says I, "that Page girl is a good looker, ain't she?"

He was horrified, same as he always was when you mentioned the New York big bugs without getting up and bowing.

"Miss Page," says he, "is a member of one of our first families."

"Want to know," says I. "First in what?"

"First in everything," he says. "Her father was one of our oldest residents."

"So?" says I. "Oldest inhabitant, hey? I suppose he could remember way back afore the town hall was built, and the hard winter of '38, and how his ma's cousin used to do chores for George Washington."

I knew pretty well what he meant, but, you see, I liked to stir him up. He was such an innocent critter: always swallowed hook, line and sinker. It done me good to see him stare at me after I said things like this.

All he said now tho was "'Orrors!"

"How about your boss, this Van Brunt?" says I. "He's another first rater, hey?"

The Van Brunts was even more "first families" than the Pages, so the valet said. They'd been there ever since New York was built. 'Twas their ancestors that got up the first barn-raising, or words to that effect.

"And Hartley?" says I.

That was different. The Hartleys was another breed of cats. Martin's dad was born in Chicago or somewheres outside of New York. He'd repented of it, of course, and tried to live it down, but he never had been quite the big apples on the top layer, like the Van Brunts. He was dead now, old man Hartley was; been dead three or four years.

"How about ma?" says I.

She was dead, too; died a year or more ago. Martin was an orphan.

And then I cal'lated it was about time to heave out the question that I'd been leading up to all along.

"What made the Page girl cut loose from him and take up with Van?" I says. "She don't look like the kind that would be too hard on a chap just because his dad made the mistake of being borne out of township limits."

Lord James fidgeted some over that. First he said he didn't know.

"Well," says I, "let's guess then. Guessing's a good Yankee trick and you'd ought to have picked it up by this time. You guess first."

He didn't want to guess, but I kept at him throwing out all sorts of foolish maybes and perhapses. Finally he got tired of saying "No."

"Oh, I don't know," says he. "I 'eard as 'ow 'twas because 'e was too mercenary. 'E was an awful chap in the Street after 'is old man died. 'E was there night and day. 'Ardly came 'ome at all."

"Humph!" says I. "I'd never suspicioned it to look at him. Wa'n't he doing well at his job?"

Lord James said it wa'n't that. Said he was doing mighty well. Folks was calling him a "born financier" and all sorts of names.

"So?" says I. "Then I don't see that Miss Page had any complaints. 'Tain't usual for a young woman to kick because her steady company is making too much money. There's something else. Out with it. I'll keep my mouth shut."

So then he told me a little—much as he knew, I guess likely. Seems that he was acquainted with the feller they call the butler—sort of a steward, I judged he was—over at the Page girl's house. And this butler was sweet on the "maid"—the young woman valet who took care of Agnes's duds and spare rigging. And one night this maid happened to be in the "conservatory"—which I presumed likely was the high-toned name for the preserve closet—and Miss Page and Hartley was in the setting room. Agnes was laying into Martin for staying down town and neglecting her.

The maid said she could hear only part of the talk, but 'twas more than average sharp and vinegarry. Agnes told Martin he was getting more mercenary every day he lived. That all be thought of was the office and making money. She detested a mercenary, hard, money-grasping man. Said money-loving was the worst vice there was, and she thanked God she had none of it, meaning vice, of course—she had money enough to sink a ship.

Then Martin he speaks up proud and short and says he has been working hard and had been trying to make money. Said he had a good reason for it, and some day he would tell her what it was. She said he could tell her now or hang his May-baskets on somebody else's door—or words to that effect. He says "Very well," and she says something else, but the maid didn't hear it because just then old lady Page come in and give her her walking papers for listening.

"And so," says Lord James, "the engagement was broke off. And a good thing too, I say. W'at's the use of 'er lowering 'erself to marry a man whose father got 'is money in trade?"

"How did Van's dad get his money?"

"By in'eritance," says he. "Of course Mr. Edward dabbles in shares, but, Lord love you, only for the fun of it."

"How was the inheritance come by in the first place?" says I. He didn't know, but I found out afterwards. Grandpa Van Brunt was an alderman.

The Twins come back into the house then. They come in slapping and jawing. I judged that the mosquitoes was living the Natural Life too. The Heavenlies set down on each side of the fireplace—I had a wood fire going, just for sociableness—and smoked and talked.

By and by Van rummages out that Natural book and spreads it open.

"Martin," says he, "hark to the voice of the oracle. Come in here, skipper, and improve your mind."

But me and his Lordship was improving the dishes just then, and, when that was done, he had beds to make and I had bread to mix and fires to lay and wood to chop and couple of million other chores to do. The Twins read and talked until they got sleepy, which was about half past nine or so; earlier than usual, but neither of 'em had rested well the night afore, I guess. Anyhow they went upstairs to turn in and I kept on with my work. Lord James turned in too. He had the back bedroom, the one over the kitchen.

'Twas still as still could be. The door and windows was open and there wa'n't a sound except the mosquitoes humming glad and thankful, and the breeze whining in the pines outside and the waves moaning along the bay shore of the island. Once in awhile I'd hear his Lordship thrash over in bed and fetch a grunt or a groan in his sleep. He had one of the late Marcellus's cornhusk mattresses and I wouldn't wonder if there was a cob end or two in with the husks. A rake across the back from a corn cob ain't the most comforting thing in the world even when a feller is used to it, and Lord James had been brought up tender.

Pretty soon I went to the back door to throw out some fish-bones and things and then I heard somebody tramping thru the sand up to the house. Neighbors are scarcer than snake's finger nails 'round Horsefoot Ozone and I couldn't think who was coming at this time of night. I ain't a nervous chap, generally speaking, but I remembered how old Marcellus had died in this very house all sole alone, and the short hairs at the back of my neck begun to bristle up. I cal'lated if anything would fetch a sot old codger like Marcellus out of his grave, the doings of the Heavenlies was that thing.

But in a minute more the walker got into the light from the door and I could see him. And I was 'most as much surprised as if he had been Marcellus himself. 'Twas Nate Scudder, with his arms full of bundles.

"What in the nation?" says I.

"Hello, Sol," says he. "Where's the folks?"

"Turned in," says I. "What's up?"

He seemed real disappointed. Set the bundles down on the kitchen table and puffed. That sand is hard walking and nobody knows it better than I do.

"Turned in so early, have they?" he says. "That's too bad. I wanted to see 'em."

"Want me to roust 'em out?" he asks.

"No, I guess not. But they're nice folks as ever I see and I've fetched 'em a few presents."

I flopped into a chair. I was getting used to surprises, but Nate's giving anybody a present was the biggest wonder yet. I figured that lunacy was catching and we was all going crazy together.

"Yes," says he. "Me and Huldy Ann's been talking it over. They've hired this house and—and—all the rest of it and we want 'em to like it. Don't want 'em to get tired and leave, you see."

I see all right. When the melon's getting ripe that's the time to water it.

"Yes," he says. "I like them young feller's well's anybody I ever see; so does Huldy. We got to thinking of 'em over here in this big house and we wanted 'em to feel at home; just as if 'twas home. Now there's nothing like pictures and such on the walls to make a place homey. So Huldy and me has sent 'em these few things to hang up 'round."

He commenced to undo the bundles.

"'Twas Huldy Ann's notion," he went on. "When she bought this place at auction there was the furniture and fixtures in it that belonged to Marcellus. Some of 'em we left here, beds and chairs and the like of that, and some we took over to our house. There was more than we needed and these is some we had in the attic."

To be continued.

HEADLINE TRAGEDIES

"Weary Woman Yawns and Breaks Jawbone."

"Takes First Bath in Twenty Years."

"Wooden-Legged Man Uses Thumb Tack to Support Hose."—Kan. Industrialist.

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 15, 1914.

Receipts of strictly fine fresh eggs were light and the market ruled firm, with demand fairly active. Butter market ruled firm with demand fairly active. Poultry offerings were moderate, values being steadily held and trading light. Fruit and vegetables quiot and unchanged.

Butter.—Western creamery, 29c; extras, 27c; firsts to seconds, 22@26c; special prints 34@36c; near-by prints 30c.

Eggs.—Candled 26@28c dozen; extras, 25c. Current receipts at $6.15 per standard case.

Poultry.—Fowls, 16½@17½c; old roosters 10@11c; chickens 32@33c; pigeons, young, 18@22c.

Dressed Poultry.—Western fowls 12½@17c; roosters, 12c; squabs, $2.00@4.50 per doz.

Vegetables.—White potatoes, Pa., new $4@4.50 bbl; onions, new, $3.00 per crate; peppers, $1.00@1.50 per crate; eggplant, $2.00@2.50 per crate; lettuce, 75c@$1.25 crate; beets 2@4c per bunch; sweet potatoes 30@50c bas.; string beans, 75c@$1.25 hamper; squash 75c@$1 per hamper; cucum per bunch; cabbage, new, 50c@$1.00 per per bunch; cabbage, nck 50@$1.00 per crate; asparagus 8@15c per bunch; radishes, 1@1¼c bch; carrots 3@5c per bch; mushrooms, 20@30c per lb.; peas 60@75c per basket; spinach 75c@$1.00 per bbl.

Fruits.—Apples $2.00@4.00 per bbl. Pineapples crate $2.00@3.00; lemons $4@6 per box; grapefruit $2.00@3.50 per box; oranges $2.00@4.50 per box; strawberries, 6@12c per quart; blackberries, 10@13c quart; Huckleberries, 10@14c; cherries, sour, 4@5c per lb.

Hay and Grain.—No. 1 hay, large bales, $18.00@18.50; No. 1 medium $17@18; no-grade, $10.00@12.00. Clover mixed hay, light mixed at $16.50@17.00; straw No. 1 straight rye, $16.00@16.50; No. 2 do., $15.00@15.50; No. 1 tangled rye straw new $13@13.50; No. 2 do., $12@12.50; No. 1, wheat straw, $10.50@11; No. 1 oat straw, $11@11.50; corn No. 2 yellow, 82@82½c; wheat, No. 2 red 99¼c@$1.00; No. 1 Northern $1.02@1.03; No. 2 white oats, 47@47½c; No. 3 white 45½@46c; standard white, 46½@47c.

Feed.—Winter bran, in 100-pound sacks per ton $26.50@27.00; spring bran, in 100-pound sacks, per ton $25.50@26.00.

Coffee.—Rio 7s 9½c; Santos 4s 12¼@12¾c. Mild Coffee.—Cordova 12½@16c.

Sugar.—Cut loaf $5.25 cwt; cubes, $4.55; powdered, $4.40; granulated, $4.30; standard granulated, $4.35; Crystal A, $4.30.

Provisions.—City beef, in sets, smoked and air dried, 31@31½c. Hams cured, 13¾@14¾c; skinned 13¾@14¾c; smoked 16@18c. Other hams, smoked, city cured, as to brand, 16@18c. Picnic shoulders, 11⅛@11¾c; do smoked, 13@13½c. Bellies in pickle, 14½@15½c. Breakfast bacon, as to quality, 19@23c. Lard, refined, 10⅝@11½c tcs; do in tubs, 10¾@11⅝c; do kettle rendered, 10½@11½c. Tallow, prime city 6½c; country, 6¾c; do. dark, 5¼c; do. cakes, 6¾c.

Philadelphia Retail

Vegetables.—Onions 15c per qt. Peppers 35c per doz; eggplants 15@20c apiece; cabbage 5@[illegible] lettuce, 2 and 3 for 25c; beets new 5c per bunch; sweet potatoes, 18c ¼-pk; white potatoes, new, 18c ¼-pk; string beans 10c per quart; tomatoes, 50c carrier; squash [illegible] apiece; cauliflower, 15@25c apiece; mushrooms, 75c pound; asparagus, 25@30c per bunch; cucumbers, 5c apiece celery 3 bunches for 25c; radishes 5c per bunch; carrots, 5c per bunch; peas, 35c per ½-pk.

Fruit.—Apples, 25c per ¼-pk; pineapples, beans 10c per quart; tomatoes, 25c quart; 15@25c apiece; grapefruit 2 and 3 for 25c; oranges 30@50c per dozen; lemons, 20@25c per dozen; strawberries, 15@20c per quart; huckleberries 20c per box; Cherries, 25@35c per pound; huckleberries, 15@18c per pound; apricots 75c per carrier.

NEW YORK PRODUCE

New York City, June 15, 1914.

High grades of butter maintained quite a firm position and prices were advanced another ½c. The egg market showed free offerings of the medium and lower grades and values take a wide range. Poultry trading is slow with feeling weaker and irregular on fowls. Fruits and vegetables fluctuating.

Eggs.—Fresh gathered firsts to extras 20@22½c; seconds to thirds, 15@19½c; no grade 15@18c; mixed 19½@23c.

Butter.—Creamery firsts to extras 25@27¾c; thirds to seconds 22@24½c; state dairy 20@26c; packing stock 15½@18c.

Cheese — Whole milk specials 15¼@15½c; do common to fancy, 13@15c; skims 1@12¼c.

Dressed Poultry.—Turkeys, dry 22@26c lb; broilers 18@23c lb; fowls, 12@16c; old roosters 11@11½c; ducks, 8@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage, 50c@$1.00 crate; green beans, $1@1.50 bas; carrots, $1.00@3 100 bchs; cucumbers 25c@$1.25 bas.; lettuce 25@75c bas; squash $1.50@2 bbl. crt; celery $3@3.5 standard crt; onions $4.00@4.50 per 100-lb. bag; tomatoes, 75c@$2.50 per carrier; peppers $1.00@2.00 box; beets, $1@3.00 per 100 bchs; potatoes, $1.00@4.50 bbl; sweet potatoes, 75c@$1.15 bas; eggplants, $1@1.75 bx; asparagus 60c@$2.50 per doz. bunches; radishes, 50@75c per 100 bunches; rhubarb, 50c@$1.50 per 100 bunches; peas 35c@$1.25 bas.

Fruit.—Apples, $1.50@5 bbl; grapefruit $3@$4 per box; oranges, 75c@$5.00 per box; strawberries 5@12c per quart; huckleberries, 7@12c per quart; blackberries, 7@12c per quart; cherries, 8@13c per quart; gooseberries 5@9c per quart.

Grain.—Wheat No. 2 red 92½c; No. 1 Northern $1.01; corn, No. 2 yellow, 81¼c; oats standard white, 46¼@47c.

BALTIMORE PRODUCE

Baltimore, Md., June 15, 1914.

In the Baltimore wholesale market butter, eggs and poultry were steady.

Butter.—Creamery, fancy 28¼@29c; do. choice 27@28c; prints, 28@30c; blocks, 27@29c; Maryland and Penna. rolls, 19c; process, 21@23c.

Eggs.—Near-by firsts 20c; western, 20c; southern 19c.

Live Poultry.—Hens, 18c; spring chickens, 32@36c; old roosters, 10c; ducks 11@18c.

Vegetables.—Potatoes 80c@$1.00 per bu; new $3.00@4.00 per bbl; beets 1½@2c per bunch; beans, green, $1.00@1.25 per bas.; cucumbers, 75c@$1.50 per basket; lettuce, 30@60c per basket; tomatoes, $1.75@2.25 crate; onions, $1@1.10 per 100 bunches; eggplants $2@2.50 per crate; cabbage, 50c@$2 per crate; radishes 1c per bunch, rhubarb, 1½@2c per bunch; spinach, 70@75c per box; peas, 65c@$1.00 per basket; squash 50c per ⅝-bu. basket.

Fruit.—Apples, $2.00@4.50 bbl. Grapefruit $1.50@2.50 per box. Oranges $1.50@2.50 per box; strawberries, 7@12c per qt.; cherries 5@6c per quart; huckleberries, 10@12c per quart; blackberries, 8@12c quart.

Grain.—Wheat No. 2 red western 96c; spot, 96c; corn, yellow, new, 80@80½c; oats, standard white, 46@46½c; No. 3 white 45½@45¾c; rye 60@75c.

Hay & Straw.—Timothy No. 1, $18.50@19; No. 2 timothy $17.00@17.50; do. No. 3 $14.50@16.00. No. 1. clover $15.00@15.50 No. 2, do., $13@14; No. 1 oat straw 10.50@11; No. 1 wheat straw, $8.50@9.00; No. 1 tangled rye straw, $11.50@12.00.

Mill Feed.—Spring bran 26.50@27. Middling, flour to white $29@31; western middlings, $27.50@28.00; city mills, middlings, $28.00@28.50.

WASHINGTON PRODUCE

Washington, D. C., June 15, 1914.

Eggs.—Per dozen, 20@21c.

Live Poultry.—Hens, per pound, 18c; roosters, 10c; spring chickens 34@35c.

Vegetables.—Potatoes, new, $2.50@4.00 bbl; onions $2.25@2.75 crt; lettuce per bas.; 35@75c; peppers, $1.00@2.00 per crate; eggplant, $2@3 crate; beets, new, 2@3 cents per bunch; carrots 1@2c per bch; cabbage 50c@$1 per crt; cucumbers 75c@$1.25 bas; sweet potatoes $1.00@2.00 per bbl; celery, doz., 60c@$1.00; tomatoes $1@2.50 crate; asparagus $1@2.50 per doz. bchs; peas, 50c@$1 per bas; lima beans $3 per basket; radishes, $1.00@3.00 per 100; rhubarb 1½@2c per bunch.

Fruit.—Apples, $3.00@5.00 per bbl. Pineapples, $2.25@2.75 per crate; grapefruit, $3.00@4.00 per crate; lemons, $4.50@5.50 per box; oranges, $3.00@3.50 per box; strawberries 5@10c per quart; blackberries, 9@11c per quart.

WILMINGTON PRODUCE

Wilmington, Del., June 15, 1914.

Butter.—Print butter, 35@40c lb. Creamery roll, 40c.

Poultry.—Chickens, dressed, 18 @ 20c broilers, 25c.

Eggs.—Fresh, 23@24c; storage, 20c.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk; cabbage, 5@15c; sweet potatoes 10@15c ¼-pk; onions 20@25c ¼-pk; new 20c qt. Eggplants 10@15c ea. Peppers 20@40c doz. Parsley, 1@3c bch. Lettuce, 8@10c bunch. Beets new 12c bunch; string beans, 20c ¼-pk; peas, 25c ¼-pk; spinach 10c ¼-pk; asparagus, 35@40c bunch; tomatoes, 15@20c qt; squash, 10c each; kale, 8c ¼-pk; parsnips, 5c bunch; cucumbers, 10@12c each; turnips, 5c ¼-pk; radishes, 5c bunch.

Fruit.—Apples, 15@25c ¼-pk. Pineapples 20@25c apiece. Oranges, California 20@30c doz. Florida, 35@40c doz. Bananas, 10@15c doz. Grapefruit, 7@10c each; strawberries 40@50c box; lemons 12@15c doz.

YORK PRODUCE MARKET

York, Pa., June 15, 1914.

The past week witnessed the heaviest buying of any week in the year 1914. Thousands of crates of strawberries were hauled to the city from the surrounding country, while many were disposed of in the near-by towns and villages. The bloom promised one of the heaviest crops York Co., has ever seen, but the excessive drought and the burning sun caused the entire crop, medium early and late, to come on the market in about a week's time. At this time our late berries should be just ripening, and they are practically over. Cherries, apples, and peaches are falling off rapidly thru the effect of the dry weather.

Eggs.—19@20c doz.

Butter.—Country, 25@30c; separator, 32@35c. Milk, 5@6c per quart.

Poultry.—Hens, 15@16c; springers, dressed, 50@85c each.

Vegetables.—Potatoes 10@18c ½-pk; 75c@$1.00 bu; cabbage 3@6c each; lettuce, 2@6c; beets, 3@5c bch; radishes 3@5c bch; onions 3@4c bunch, 15c ½-pk; lima beans, 15c per quart; sweet potatoes, 15c ½-pk; lard 14@16c lb.; celery 5@10c ea; peppers, 10@12c doz; turnips 10c per ½ pk; sauer kraut 8c qt; apple butter, 20@25c qt.; asparagus, 5@8c buch; rhubarb, 3@5c per bunch; peas, 15@24c per ½ pk.

Fruit.—Apples, 25@35c ½-pk; strawberries, county 5@8c per box; cherries, 6@10c per box; huckleberries, 15c per box.

Retail Grain Market.—Wheat, $1.06 bu, corn, 88c; oats, 56c; rye, 77c; bran, $1.60 cwt.; middlings, $1.60 cwt.

Wholesale Grain Market. — Wheat, 96c; corn, 78c; oats, 45c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 15, 1914.

Beef Cattle.—The local condition developed a slow but rather steady feeling as to trading with a moderate supply of Pennsylvania and Chicago cattle making up the current shipments. Cows as well as calves were in ordinary demand at former values.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,984	10,669	6,269
Previous week	2,608	8,011	5,079

Best steers	$8.87@9.00
Choice steers	8.65@8.75
Good do	8.45@8.55
Medium steers	8.00@8.25
Common steers	7.75@7.87
Bulls	6.00@7.50
Fat cows	5.00@6.75
Thin cows	2.75@4.50
Milk cows	45.00@85.00

Veal calves higher.

Best calves	$11.00@11.50
Good to choice do	10.00@11.00
Medium	8.00@9.00
Common do	6.00@7.00

Sheep and Lambs.—There was a noticeable increase in the offerings of stock and a good absorption of all desirable grades at fairly steady prices.

Choice wethers	$5.75@6.00
Good do	5.25@5.50
Common to medium	4.00@5.00
Ewes fat	4.25@4.50
Extra lambs	8.25@8.50
Good to choice do	7.50@8.00
Common to medium	5.00@7.00
Early spring lambs	9.50@9.75

Hogs.—Conditions were fairly steady and demand was seasonable. Western, $11.50@11.75.

City Dressed Stock.—Every variety of choice and prime meat was held in a steady to firm manner, inquiry being about normal. Steers 12@14c; heifers, 10½@13c; cows, 9@12c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 11@12c; extra wethers, 13c. Spring lambs 18c. Hogs, 11¾@12c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., June 15, 1914.

Cattle.—With a liberal supply of 110 loads compared with 80 loads the week before the market ruled fairly active at prices generally 10 to 15 cents lower. A few choice cattle on sale sold higher than the week before but the quality was the best that has been here for some time. Cows in liberal supply and sold lower, generally 25 cents off. Heifers in fair supply and sold about steady. Bulls in liberal supply and lower. Best fresh cows steady. Other grades and springers slow. Today's receipts were 60 cars. With the demand only moderate, the market ruled slow.

Good to choice	$8.80@9.00
Good 1,300-1,400 lb.	8.50@8.75
Medium to good 1,200-1,300 lb	8.10@8.60
Tidy 1,050-1,150 lb.	8.20@8.50
Fair to medium, 900-1,100 lb.	7.50@8.10
Rough, half-fat, 1,000-1,300 lb.	5.00@7.00
Common, 700 to 900 lbs	5.75@7.00
Common to good fat oxen	4.50@7.00
Common to good fat bulls	5.50@7.75
Common to good fat cows	4.25@7.00
Heifers	5.50@8.25
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@90.00

Calves.—Today's receipts were 1,100 head. Choice sold slow, others steady.

Heavy and thin calves	$6.00@ 7.50
Veal calves	8.00@10.25

Hogs.—The supply of hogs has been liberal all week and the market ruled fairly active at about steady prices, while the close on the light and medium weights was 5 to10 cents per cwt. higher. Today's receipts were 65 double-deck loads. The market ruled 5 to 7½ cents lower.

Prime heavy	$8.30@
Heavy mixed	8.35@
Prime medium weights	8.37½@
Best heavy Yorkers	8.40@
Light Yorkers	8.40@
Pigs	8.10@8.25
Common to good roughs	7.00@7.35
Stags	6.25@6.75

Sheep and Lambs.—Sheep and lambs in fair supply but with a good demand for sheep they closed 30 cents per cwt. above Monday's prices, while the springer and yearling lambs were only steady. Today's receipts were 25 double-deck loads. With only a fair demand the market ruled slow and 15 to 25 cents lower on sheep and lambs. Spring lambs were in fair supply and 25 cents lower.

Prime wethers	$5.90@6.10
Good mixed	5.60@6.00
Fair mixed ewes and wethers	5.00@5.50
Culls to common	2.50@4.00
Culls to choice lambs	4.50@7.50
Spring lambs	6.00@9.50

BUFFALO LIVE STOCK

Buffalo, N. Y., June 15, 1914

Cattle.—With a firmer Monday market the trade was fair; dry-fed grassy cattle easy, the warm weather making a light demand for this kind. The close was slow on common grades and steady on good. Today's receipts were 4,000 head. Best, sold steady, others 10 to 15 cents lower.

Choice heavy steers	$9.00@9.30
Fair to good	8.25@8.75
Yearlings	7.75@8.65
Handy butchers	7.25@8.60
Good to choice fat cows	5.00@7.25
Good to choice heifers	7.00@8.25
Butcher bulls	6.25@7.60
Feeders	7.00@8.00
Cows and springers	30.00@90.00

Calves.—There was very little change from the Monday's basis of $10.50@10.75. The close was half a dollar higher, the basis being $11@11.25. Today's receipts were 1,700 head.

Choice veals	$10.50@10.75
Lights and thin	6.00@ 8.75

Sheep and Lambs.—The light supply Monday made a higher basis for the week and prices ruled firmer for yearlings and choice lambs. Sheep were in good demand. Heavy lambs light demand. The market on the closing days was good and prices generally higher. Spring lambs were in good demand and higher. The whole trade was good. Today's receipts of sheep and lambs were 3,000 head and they sold steady.

Choice lambs	$9.50@10.00
Yearlings	8.00@8.60
Wethers	6.50@6.75
Ewes	4.50@5.50
Mixed sheep	5.75@6.00

Hogs.—The liberal supply Monday lowered the basis of prices, but there was a good clearance. The bulk of the Yorkers brought $8.55. Heavy hogs, $8.50@8.55. On the close the trade ruled 5 to 10 cents higher. Mixed and heavier hogs stronger. Roughs were firm. Today's receipts were 18,000 head.

Heavies	$8.40@8.45
Mixed and medium	8.40@8.45
Yorkers	8.40@8.45
Light Yorkers	8.40@8.45
Pigs	8.10@8.25
Roughs	7.10@7.25
Stags	6.50@7.00

Horses.—Offerings 350; fair demand at unchanged values. Basis on best teams, $700@750.—S.

BALTIMORE LIVE STOCK

Baltimore, Md., June 15, 1914

Cattle.—Receipts for the week were 1,535 head against 1,697 last week.

Steers	$6.25@8.50
Heifers	5.50@7.50
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh cows	32.50@70.00

Sheep and Lambs.—Receipts for the week were 12,247 head against 8,366 last week. Heavy supply; market lower.

Sheep	$2.05@
Spring lambs	7.00@9.25

Hogs.—Receipts for the week were 9,008 head against 11,221 last week.

Light Western	$8.75@8.80
Heavy to medium	8.65@8.75
Near by	8.60@8.70
Pigs	8.00@8.65
Roughs	6.50@7.75

Calves.—Receipts for the week were 406 head against 358 head last week. Light supply, market higher at $6.50@11.00.

NEW YORK LIVE STOCK

New York City, June 15, 1914.

Beef Cattle.—Receipts today, 2,700 head Market steady.

Steers	$6.75@9.00
Bulls	5.75@7.75
Cows	3.55@6.75

Calf receipts 7,000 head. Market lower.

Choice	$8.00@11.50
Culls	5.75@ 6.75

Sheep and lamb receipts 20,700 head Market lower.

Sheep	$3.50@5.25
Spring lambs	8.50@9.75

Hog receipts 6,924 head. Market steady.

Choice	$8.40@8.60
Roughs	7.00@7.25

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., June 15, 1914.

Hay.—Receipts during the beginning of the week were rather heavy but the demand so far managed to take care of same with only slight concessions. At the present writing the market is fairly good considering the season of the year. It may be if receipts continue heavy market will decline further but at present, indications do not point that way.

No. 1 timothy	$17.50@17.75
No. 2 timothy	14.50@15.50
No. 1 light mixed	14.50@15.50
No. 1 clover mixed	13.00@13.50
No. 2 clover mixed	10.00@11.00
No. 1 clover	12.50@13.00
No. 2 clover	10.00@12.00

There is a good demand for oat straw but the other grades are dull and slow.

No. 1 Oats	$9.25@ 9.50
No. 2 Oats	9.00@ 9.25
No. 1 Wheat	9.25@ 9.50
No. 2 Wheat	8.75@ 9.00
No. 1 Rye	10.25@10.50
No. 2 Rye	9.25@ 9.75

Ear Corn.—Receipts of ear corn quite liberal while the demand is very limited; market dull.

No. 2 Yellow	77 @78c.
No. 3 Yellow	73½@75c.
No. 1 High mixed	75½@77c.
No. 2 Mixed	73½@74½c.

Oats.—Receipts quite liberal while the demand is slow; market lower.

No. 2 white	44¾@45c.
Standard oats	44 @44½c.
No. 3 white	43 @44c.
No. 4 white	41½@42½c.

NEW YORK HAY MARKET

New York City, June 15, 1914.

Hay prices maintain quite a steady tone with a good demand. Receipts Saturday were 968 tons. Prime timothy $1.15 bale; No. 1, $1.10@1.10½; No. 2 do., $1.05@1.07½; No. 3, 95c@$1.00; clover, 82½@$1.05.

The straw market remains steady. Receipts 10 tons. Oats straw, 50c; rye straw, 77½@85c.

GRASS SEED MARKET

Toledo, O., June 15, 1914.

Cloverseed.—Prime cash, $8.10; October and December, $8.67½.

Timothy.—Prime, cash, $2.65; September, $2.75.

NEW YORK MILK MARKET

New York City, June 15, 1914.

The dealers were very well pleased with last week's business. The goods went well and the demand for cream stiffened up at the end of the week. The market conditions have so far not changed the probability that many of the dealers will pay the Borden rate for June. Last year the Borden company paid a bonus in addition to the regular rate. If this is done this year, these other dealers will do the same. Upwards of 70 percent of the market's supply will follow this rate.

The receipts of milk and cream in 40-quart cans for the week ending June 13, were as follows:

Railroad	Milk	Cream
Erie	49,584	3,906
Susquehanna	7,763	392
West Shore	13,867	1,783
Lackawanna	62,950	3,850
N. Y. Central (long haul)	93,491	3,993
N. Y. Central (short haul)	15,125	49
Ontario	43,703	5,691
Lehigh Valley	38,857	2,603
Homer Ramsdell Line	3,025	67
New Haven	9,220	70
Pennsylvania	9,195	504
Other sources	1,780	33
Totals	348,360	22,940

ELGIN BUTTER QUOTATION

Elgin, Ill., June 15, 1914

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 27½c.

TOBACCO MARKET

The greater part of the crop has now been transplanted and a very few days will find practically the entire acreage in the field. The acreage will be smaller than last year but just how much smaller cannot as yet be determined. The crop is going out at a timely season and under favorable conditions with the exception of drouth. Rain is much needed and until it comes the transplanted tobacco seedlings will make little headway. Very little of the old crop remains unsold, the few remaining crops being of rather inferior quality and selling at a correspondingly low price. It was reported that one grower refused $11.50 per cwt for a crop of good quality. The cigar industry continues slow which is the most potent cause of easy conditions all along the line.

In New York the main feature is the tendency to specialization in varieties and methods. Climatic conditions there were favorable and transplanting is under way. Wisconsin has not recovered from its recent storms and climatic conditions are still changeable and uncertain, in sharp contrast with Pennsylvania and Ohio. In Wisconsin transplanting has progressed under favorable conditions and the acreage will be considerably in excess of an average. Some growers there are preparing for irrigation.—H. F. Tweed, June 15, 1914.

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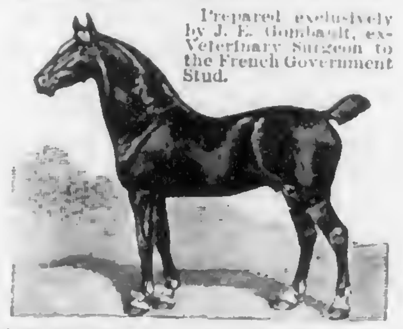

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Veterinary

(Conducted by W. C. Fair, V. S.)

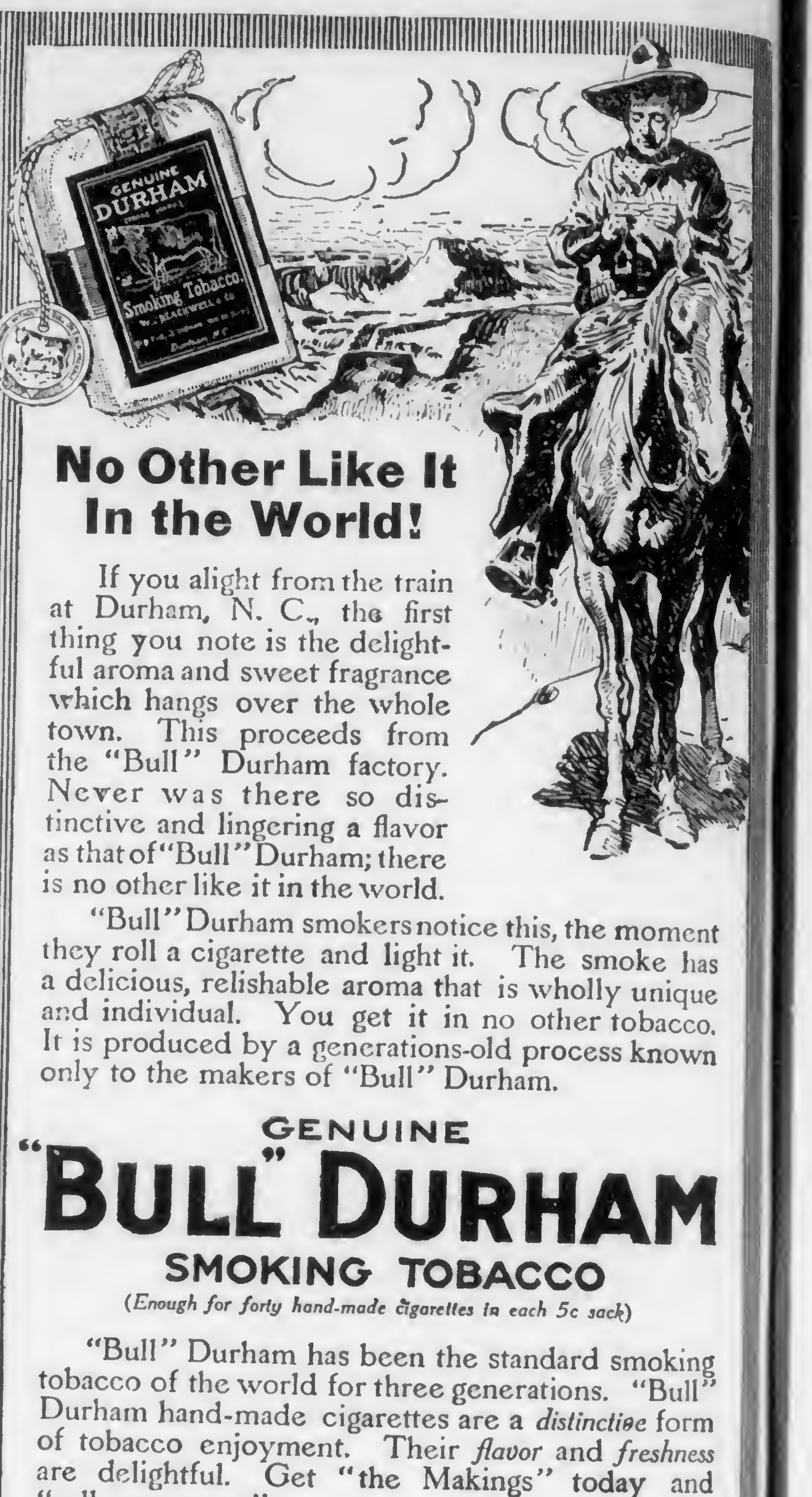
(Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also the name and address of writer. Initials only will be published. We cannot make reply by mail. This is one of the most valuable columns of the paper and we invite readers to make use of it. Clippings from this column, when properly preserved and classified, would make one of the most valuable medical symposiums a farmer-stockman could obtain.)

Side-bone.—I have a horse, 8 years old, which has a side-bone. I am anxious to have it removed. T. C. A., Espyville Station, Pa.—Apply 1 part red iodide mercury and 4 parts lard every week or 10 days. Perhaps it is needless for me to say that in some cases the side-bones should be removed by surgical operation. Unless this is done, horse will never fully recover. Furthermore, it always relieves a horse lame from side-bone to lower heels. Give her rest and if worked she should travel on soft footing.

Bloody Milk.—Occasionally my cow gives bloody milk. I would like to know what can be done to correct this trouble. B. J. E., Durand Pa.—Careful milking, plenty of bedding and keeping her away from other stock will perhaps remedy trouble. Over-feeding has a tendency to cause congestion of udder which is sometimes followed by hemorrhage. Apply extract witch hazel to udder twice a day.

Judging Soundness in Horse.—I expect to engage in business buying and selling horses, but have not had much experience and would like suggestions in judging soundness of horses. M. E. T., Jamestown, N. Y.—First of all get experience with a dealer. Practical experience is worth more than a theoretical knowledge gained from books or by correspondence. In examining a horse as to soundness many things should be considered, because unsoundness depreciates value. First, examine the mouth carefully and ascertain if it is normal, notice if notrils and nasal passages are free from polypus or obstructions. See that the lips are not paralized, that the glands of throat are not swollen, that the ears are normal and that his hearing is good. Pass the hand up on poll to ascertain if he has poll-evil; also examine neck under mane for warts or tumors. Examine the shoulders, upper part of neck and withers for bunches or sores, notice carefully if there is any swelling of withers or sweeny in shoulder. Examine the back under saddle for galls or bunches; look carefully under abdomen for hernia or abnormal bunches. The sheath or udder should be examined carefully, then examine the rectum for bunches. Then examine both fore and hind limbs by passing hand over them carefully to ascertain if there are any splint, wind puffs, ringbones or side-bones. Bend the knee to ascertain if there is any mechanical stiffness, then examine hip, stifle, hock, shin, fetlock and pasterns carefully for bunches. Be especially particular in your examination of hock. The opposite side should be gone over in like manner. The eye should then be carefully examined by leading the horse into a dark stall or stable facing a reasonably bright light. When in this position eye imperfections are readily discovered. The animal should then be walked, also backed, then trotted both straight away and in a circle, obliging him to go both to the right and left. In some cases of lameness the horse shows lameness only when traveling in a circle. In order to test his wind, put some one on his back and give him a brisk gallop; this will tell you whether he is a roarer or has heaves. Stand him in the stable where you can watch him to ascertain whether he is a crib-biter or weaver, or stall kicker. Also observe if he stands up squarely on all four feet, or rests one or more. Be sure and see him driven and also in pull of a heavy load. The writer has had a great deal of experience both in breeding and dealing in horses and knows that it is profitable to see for himself rather than to take statements from people who have horses to sell. You usually pay full price for their talk.

Wart on Neck.—One of our two-year-old colts has a wart on neck under mane which is about the size of a small hen's egg. What can I apply that will take it off? B. J. A., Warren, Pa.—Warts are only skin deep, therefore, you had better cut it out and raw spot will soon heal. Apply equal parts boracic acid and tannic acid to wound, 3 times a week.



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ESTABLISHED 1880 PUBLISHED WEEKLY
Vol. 35—No. 26. PHILADELPHIA, PA., SATURDAY, JUNE 27, 1914. 2 Years for $1.00.

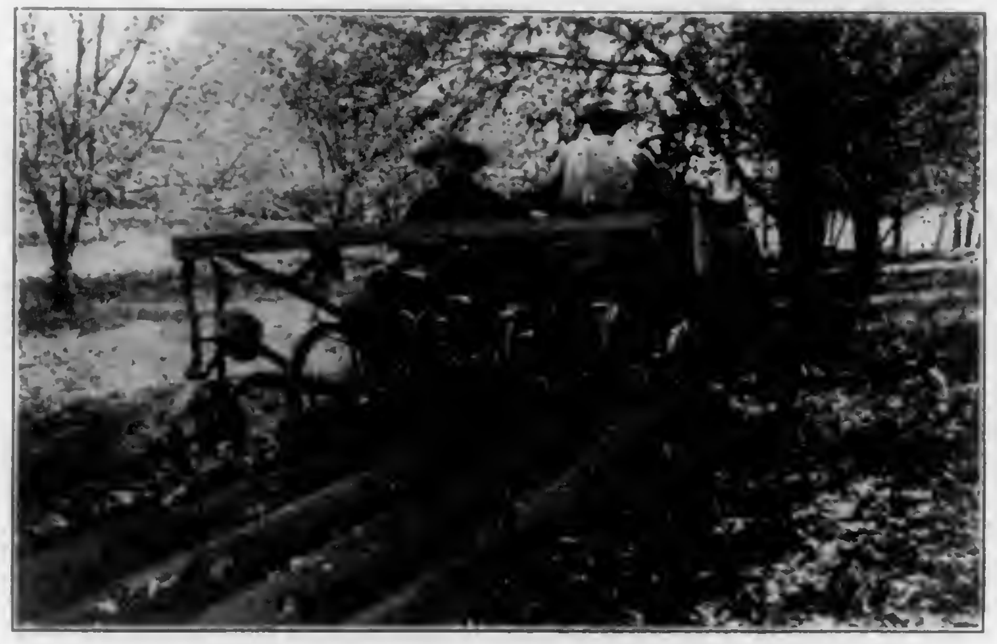
Tractor Power On The Small Farm.

Most of us are inclined to associate the idea of tractor power for farm work with immense areas, clear fields and much but rather poor quality of work done. When the farm tractor is mentioned we call up mental pictures of an immense engine drawing a 12- to 20-bottom plow across a prairie farm where there is not a stone, stump, tree or even a fence in sight. To such a mind, a farm tractor on 50 acres of land and used to perform the exacting work in orchard cultivation suggests the proverbial bull in the china shop. Yet Eli P. Garrettson, one of the most skillful and successful orchardists in Adams County, Pa., (and there are some mighty skillful orchardists in Adams County) is demonstrating the economic advantages of the farm tractor in just such work.

Mr. Garrettson has a farm of 50 acres, 30 of which are in apple orchard with the remaining 20 in preparation for planting in the near future. The motive equipment on the farm consists of a gasoline engine, a farm tractor, a motor truck and a mule team. The tractor and truck are meeting the needs of the farm so well and so completely that the only annoyance now experienced is that the mules are left with little to do but kick the stalls to pieces. In cultivation of the orchards and in seeding and harvesting of the farm crops, as well as in moving the crops to market, the tractor and truck are meeting every requirement.

It was while trying to cover the orchard area with teams and work as close to the trees as good cultivation demands that the small tractor suggested itself to Mr. Garrettson. Investigation seemed to prove that the tractor would do just the work required. Accordingly he purchased a tractor that was rated to develop five horse power on draft and ten horse power on the belt. He also purchased a four-bottom gang plow. With this outfit the problem of getting over the orchard with plow or harrows when conditions are just right to make such work most effective, and in getting so close to the trees with all cultivating implements, has been solved. With two men, one to drive the tractor and one to operate the plow, he gets perfect work. The steering wheel is the highest point on the tractor and the driver is in position to raise low-hanging branches and prevent injury to tree or fruit. And as the machine is under perfect control at all times, the plow or harrow can be brought as close to the trees as desired without danger of barking or jarring them. The accompanying illustrations show the perfection of the outfit in this respect.

The second great advantage found in the tractor outfit is in increasing the amount of work which can be done in spells of irregular weather or when conditions demand rapid work. The bulk of Mr. Garrettson's orchard has now reached the point where deep plowing is no longer necessary. With plows running three inches deep, five acres is about an average day's work, and seven acres have been covered in a day of 12 hours. In plowing for corn or other field crops, the tractor handles the four-bottom gang when plowing at a depth of five inches. Much of this farm is hilly and the tractor has been put to very severe tests in operation of tillage machinery on steep grades. It is used on from 25 to 30 percent grades without difficulty, but has to run on low gear under such conditions. On low gear it travels at a pace somewhat slower than the average farm team.



TRACTOR AND FOUR-BOTTOM PLOW DOING CLOSE WORK IN GARRETTSON ORCHARD, ADAMS COUNTY, PA.

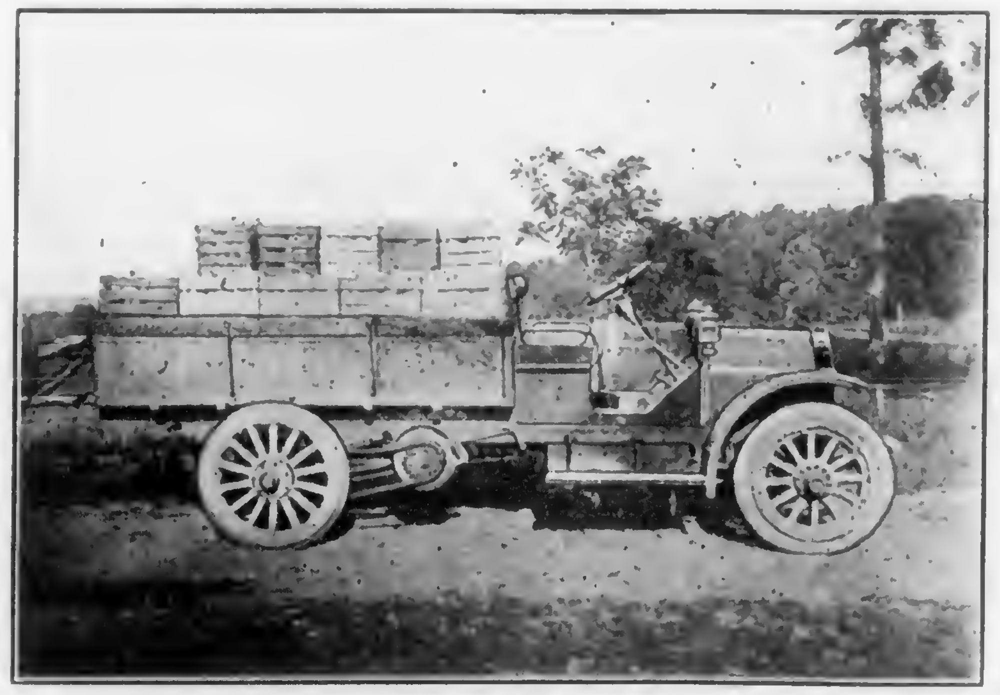
The tractor is used on a 25-disk cutaway harrow in orchard work and covers from eight to ten acres per day of nine hours, depending upon soil conditions.

It is also used in other farm work. During the past two years it has drawn the grain binder in cutting wheat over very uneven ground. The average for the two seasons was about five acres in four hours. The grain acreage is small on this farm, but the tractor has proved its adaptability in such work. It was found advisable to put a short tongue on the binder to facilitate easy handling, and have a boy operate the adjusting levers. The tractor engine has also been used in operating the ensilage cutter, wood saw, feed chopper, etc.

The cost of operating the tractor varies to a large degree with the nature of the work, condition of the soil and skill of the operator. The maximum fuel consumption, when the tractor is working at full capacity, is about 12 gallons of gasoline per day. This was the amount used in plowing the seven acres of orchard in 12 hours. The fuel bill and a slight expense for lubricating oil about cover the cost of operation. Repairs have been nominal so far under good care.

Mr. Garrettson is, if possible, even more enthusiastic over the efficiency and all-around service of the motor truck in his work. The truck has practically taken the place of the team in all road hauling and in much of the miscellaneous hauling on the farm. It is of 35 horse power, guaranteed to carry 1,500 pounds, and actually able to carry much more. It is equipped with solid tires on the hind wheels, and has a carrying body eight feet long and four feet wide. It was found advisable to remove the covered body and equip the car with a platform rack.

The use made of the truck in the apple harvest last fall is an example of its adaptability to farm requirements. Mr. Garrettson handles apples in the orchard in bushel crates. The apples are packed in barrels at the barn and drawn immediately to a storage house one and one-quarter miles from the farm. The regular routine during the rush of the packing season last fall was to bring a truck-load of 40 crates from the orchard to the barn at the close of each day. In the morning the truck would first take its load of 12 barrels to the storage house while the packers were barreling the load brought in the evening before. The truck regularly made the 2½-mile trip to the storage house, returned, brought in a load of 40 more crates from the orchard and was ready for its second load of barreled apples by the time they were packed. Thus the picking force, the packers and the hauling crew were kept busy and the apples were moved away to storage without loss of time or waste of storage space. In a test of time the truck was loaded at the barn, was driven to the storage plant, was unloaded and returned to the barn in 24 minutes.



35-HORSE POWER MOTOR TRUCK USED ON E. P. GARRETTSON FARM, ADAMS COUNTY, PA.

For this work the truck is not only more efficient than teams in speed of work and amount of load handled in a day, but is also more economical in cost of maintenance. During the heaviest and steadiest work, the fuel cost does not exceed five gallons of gasoline per day. The truck has traveled over a thousand miles, frequently heavily loaded, and the tires show little wear. Another advantage over a team is its greater carrying capacity when required. It has drawn 1,500 pounds of lime at full speed and 2,780 pounds over loose ground at a more moderate speed. To increase capacity for rush season work, Mr. Garrettson plans to buy a trailer to couple on behind the truck. A heavy spring trailer, capable of carrying from 10 to 12 barrels of apples, can be purchased for about $100, and Mr. Garrettson believes that such an outfit will serve his needs better and cheaper than a larger or heavier truck. As the traction capacity of the truck will easily handle the trailer, this outfit should meet the requirements for many years to come.

Mr. Garrettson has something like $2,000 invested in traction and power equipment on his farm. This would buy considerable high-quality horse or mule flesh; but with the care he is giving his equipment, he expects it to show a very favorable comparison with teams in time of service, and his records of cost of maintenance and operation to date show it to be more economical. Again, the power equipment has the advantages of doing faster work than is possible with teams, better work where care is necessary, will handle bigger and heavier loads and costs nothing for maintenance except storage room when not in use. An additional advantage, the value of which it is impossible to estimate, is that it is tying two growing sons to the farm. The boy likes to see things "move." A big day's work at the harrow appeals more to his desire for accomplishment if it is done back of a traction engine rather than a team of mules, and if it covers from 10 to 12 acres rather than 5 to 7.

Mr. Garrettson has given both tractor and truck a thoro test, and is enthusiastic over both. He has demonstrated to his own satisfaction that both are more profitable to him than horses or mules for his character and quality of work; and he has demonstrated that both are applicable to the labor requirements of the small farm. Arthur J. Anderson.

LIGHTNING ROD FACTS

I think it is an established fact that a good copper cable lightning rod system is a great protection to property from lightning. Scientists, insurance companies, reading and thinking people generally verify this statement. Many farmers have protected their buildings and contents from lightning the past few seasons who for a time had regarded the lightning rod proposition as a sort of fake.

It is claimed that over 50 percent of the losses paid by Farmers' Mutual Fire Insurance Companies are caused by lightning. A few insurance companies known as Farmers' Mutual Lightning Protected Fire Insurance Companies have taken advantage of this fact, and are insuring only buildings properly rodded. The rates of insurance are only a fraction of that paid by the majority of farmers who are insured by other companies covering both rodded and unrodded buildings, at a uniform rate; a practice which is very unfair. It is a pity that there are not more companies insuring rodded buildings only, or that insurance companies generally do not lower rates on protected buildings. Why should we who have invested money in rods to protect our property from lightning, pay the same rate of insurance as the man who does not protect his property?

A recent statement of a farmers' mutual lightning protected insurance company of Michigan is interesting. This company insures only buildings of over $200 valuation, when properly rodded with first-class copper cable lightning rods. The company is quoted as carrying at present a risk of over $35,000,000 worth of property, with the loss of only one building by lightning in five years, and the loss of this building was traced to defective lightning cable. While this company appears to have very strict rules for rodding buildings, this statement of losses is conclusive of results.

For the policy and survey fee this company charges $1.50; premium 10 cents on each $100, or fraction thereof insured. Their assessment in 1911 was $1.30 per $1,000; in 1912, $1.20 per $1,000 and in 1913, $2 per $1,000. I am at present carrying insurance on farm property in three different insurance companies. The rates I am paying average about $5 per $1,000 of insurance annually. About $2 would pay the highest assessment of the above company in three years. I figure the other $3 per $1,000, which in my case amounts to nearly $20 annually, goes toward paying heavy losses caused by lightning on unrodded buildings. This is not a "trick in the trade" but is "unfair treatment."

The above company will not insure buildings rodded with steel or iron wire cable. They must be rodded with copper cable rods and these are not to be less than 5-16, nor smaller than 18 gauge wire. Glass or earthen insulators must not be used. All rods must have at least two ground rods, connected by the main rod, making a continuous rod circuit from ground to ground. Points must not be placed farther than 25 feet apart, and not to exceed three points to each ground rod. The points must be especially manufactured for the purpose. Gas pipes must not be used for groundings, but the copper cable itself must be put down at least 8 feet, and in light soils still deeper.

Cheap lightning rod systems do not necessarily mean inefficient ones. On the other hand, first-class jobs, and using first-class material, is possible at very moderate cost. There is nothing complicated in rodding buildings and any farmer with good common sense can rod his buildings himself. If he is not climber enough to do the roof part of the work he can well afford to hire someone by the day to do this under his instructions. When rodding my buildings I purchased 7-16 pure copper cable and pure copper points from a manufacturer at wholesale prices, getting it at a fraction of what most agents charge for rodding buildings.

I required considerable rodding material which enabled me to get wholesale rates, but two or three farmers can order their material together. I found it worth money to write several firms before purchasing my material. I figured I saved nearly $100 by buying direct. I was very particular about the groundings of the rods, sinking them 10 feet in the ground to insure their being in moist soil at all times. Two and three groundings were used according to the size of building rodded. The cable was run along the ridge of roof, then down the facing board from gable to eave, and then down the siding and grounded. The tops were placed about 15 feet apart, and fastened to the cable by special clamps. All eave spouting was connected with the lightning rod cable, which is essential.

The work of putting up rods was not difficult, except punching holes the desired depth for the groundings. All necessary clamps, galvanized nails and staples for constructing the rods were purchased with the material. The manufacturers also guaranteed that should any of the buildings rodded be burnt by lightning with the rods in good repair, they would return the purchase price of the rods, with 6 percent interest. When the opportunity comes to insure my buildings in a lightning protected insurance company, I am ready to consider business.—Farmer, Erie Co., Pa.

TRACTOR ENGINE ON CUTAWAY HARROW IN ORCHARD WORK ON FARM OF E. P. GARRETTSON, ADAMS CO., PA.

CAUSES OF HOLES IN POTATOES

"Last year my potatoes were very badly eaten on the surface, and I could find no cause of same. I noticed that the fish-worms were very thick in the potato patch. Could that be the cause?"—A. J. C., Grove City, Pa.

I think the injury described may have been done by the white grub, which is the larva of the May beetle or June bug. It may have been caused by other species of insects, such as wire worms, or by the disease known as the potato scab. Most persons make the mistake of calling scabby potatoes "worm eaten." They do not realize that the disease known as potato scab causes pits in the tubers, as tho they were eaten by worms or grubs. However, these pits vary in diameter and in shape, but are generally about the same depth. Holes made by the white grub are much larger and deeper than those made by the scab germ, while those made by the wire worms are often small in diameter, but deep.

While it is important to recognize the trouble by the marks left behind, it is more important to prevent such damage in the future. Therefore, I can say that the standard method of preventing damage by the white grub is to plant potatoes on ground that has been in a cultivated crop for the last two years. However, this present summer is to be a year of the mature June bugs or May beetles, which are the parents of the white grubs, and you were safe in planting potatoes in sod ground this year, if preferable to do so; 1915 will be a white grub year, and potatoes then should not be planted where there was sod during the fall of 1914. Of course, in all cases the enemies of the May beetles and their larvae should be preserved. Among these the skunk is one of the most useful creatures.

To prevent damage by scab, always dip seed potatoes in a solution of formalin or corrosive sublimate. Use one-half pint of formalin in 15 gallons of water. Put the potatoes into a sack and dip them into a barrel of this solution, letting them stand one-half hour. Then drain them, spread and let them dry, and keep them clean until planted.—Prof. H. A. Surface, State Zoologist.

A TRIP WORTH WHILE

A trip worth while is one going by trolley from Reading to Kutztown to Allentown, Bethlehem, Nazareth, Bangor, Portland and Stroudsburg, thru the most fertile section of Berks, Lehigh and Northampton counties where nature provided soils unexcelled for all crops of cereals, fruits and potatoes. The iron, cement, slate and manufacturing industries of vast extent give employment to armies of employes; affording ready market for the products of the soil.

In the vicinity of Stroudsburg, the Delaware Water Gap and the bank of the river for a long distance is lined with cottages, bungalows and boarding houses, and extensive hotels afford accommodations for a large population of guests and temporary residents from the cities during the summer months. The Delaware Water Gap is worth a visit and a trip on the scenic trolley line winding its way over the mountains affords a grand view of the surroundings. The heaps of sand, gravel and boulders over a part of Northampton and much of Monroe Counties prove the existence at a remote period of a glacial age extending from ocean to ocean, covering valleys, dales, hills and mountain summits with drift brought from the far north and near by points, all mingled in confused masses of granite, sand stone, lime stone, etc, in places scattered over the surface, in mounds and terraces. Some sections are so covered with boulders that the land is not tillable; in some places swamps are formed, together with lakes of various dimensions, while in other places a fine fertile soil was formed of excellent quality.

One of the neglected opportunities afforded agriculture along the Delaware Valley appears to be trucking and fruit growing; the demand for vegetables, berries, etc., among the hotels and boarding places is largely shipped from a distance. Mentioning this to a farmer having a cottage and a farm along the river suited to producing garden crops, the answer was that with a team and carriage, keeping a few boarders and earning five to seven dollars a day in taking visitors out on trips around was easier money than digging in the ground. He said also that those who came to spend their vacations in the country were usually well supplied with cash and it was a part of the business of the citizens to separate their guests from some of it.

Stroudsburg was the mecca where assembled members of the State Board of Agriculture, institute lecturers, experts, specialists and plain and fancy farmers from various counties, but the farmers from the vicinity were conspicuous by their absence. W. H. Stout, Schuylkill Co., Pa.

Farm Crop Notes

By R. P. KESTER.

Counselor on Soils to the State Department of Agriculture.

Thru this department Mr. Kester will discuss queries from Pennsylvania Farmer readers on soils, field crops and general farm practice. Address all queries to Pennsylvania Farmer, Philadelphia, Pa.

Notes by the Way

If he who spends his time in traveling in the interests of agriculture were privileged to photograph and describe all the good and the bad in agricultural practice that he sees, it would, if well done, make a most interesting and useful book, one that would teach more helpful lessons to farmers than any technical books on the subject.

One of the most noticeable things is that good crops and success depend more on the man than the land. In some sections, you will see only here and there a prosperous looking farm, standing out like an oasis in the desert, an example of what might be done thruout the neighborhood.

Again, we see whole communities that seem to be prosperous, happy and contented. In such places we find a progressive community spirit. In such places the people meet and talk and work together for their common betterment. Whatever may be said in addition, the basal need of agriculture and agricultural communities is personal efficiency and social co-operation.

The Legislative Way

They who, for partisan purposes or from a desire to further their own ambitious ends, try to befog the farmers' minds as to their needs and duties should be distrusted, no matter what label they wear. The demagogue should find no welcome among farmers. He may be recognized by his speech, his style and his spirit, not by his business, place or party name. The farmer has too long been playing the part of the ball in the foot-ball game of politics. Agitators have declared this law and that law, the success of this party or that party, to be the panacea for the ills that exist in the agricultural world. Laws have been passed and other laws repealed; parties have triumphed and have been defeated and the millennium is not yet—nor will it ever be brought by legislation alone. Better laws will succeed, not precede the time of greater intelligence and personal efficiency and a more general willingness to work with and for each other.

Fassett's Fruit Farm

Situated on up-land, a few rods back from the Susquehanna river in Wyoming Co., is the properous fruit farm and hospitable home of F. H. Fassett. Mr. Fassett is well known thruout Pennsylvania as an institute lecturer on fruit growing. A visit to his farm will show the visitor that he does and has just what he tells of on the platform. Dropping in on him the other day, I found him up a tree. He was pruning some ten-year-old Northern Spy trees to hasten full bearing.

One can see in this orchard the effects of the different methods of treatment and fertilization. The sod mulch, sod and manure, culture and cover-crop, etc. Also the effects of different fertilizing materials, singly and in combination. Exact records of growth and production are kept as well as the cost of the different treatments. Mr. Fassett is conducting this experimental work in connection with the state experiment station. However, the orchard is first and last a business proposition, and Mr. Fassett and his sons are making it pay.

Summer Forage

How soon the dairymen or other stock-keepers run against a snag when a dry spell hits them if they are depending entirely upon pasture for summer feed! The increasing price of land, the uncertainty of sufficient rain, the passing of fences, etc., all indicates a greater need to provide something to help out in the feed of herds in summer. Silage, alfalfa, oats and peas, early corn are easily provided and may be allowed to ripen and be stored for winter if not needed. Anyway, their provision allows the farmer's head to lie more easily when the summer showers fail to come regularly.—R. P. K.

HESSIAN FLY THREATENS

The Hessian fly has returned to the wheat producing counties of North New Jersey and threatens the destruction of the 1914 wheat crop. Recent warm weather revealed the presence of the pest and confirmed the suspicions of the farmers that the bugs had returned. Grain fields, which gave promise earlier in the season are now showing the yellow streak indicating that the flies are at work. Concerning the growing wheat crop, there is nothing that can be done now to check the ravages of the fly. The problem now is to cut off the fly by preventing its propagation, and the consequent menace to the wheat that will be sowed this fall.

THIS OUTFIT HAS COVERED THE GARRETT

The danger to next winter's wheat crop lies in the fact that if the Jersey farmers follow their usual practice of planting the crop early in September, the flies will have opportunity to lay their eggs in the tender "tillers." Safety lies in planting after Sep. 25. If this is done, the early shoots will appear after the fly has gone, and the next crop—the winter wheat to be harvested in the summer of 1915—will be immune from the fly. As to late planting, experience teaches that farmers are reluctant to give it due attention. The farmers have asserted repeatedly, despite the certainty of a tainted field, that unless their fields be sown early in September, the wheat will lack the virility to live thru the winter. The answer to this statement would seem to be that we should be able by careful preparation of the soil and the use of a speedy fertilizer to bring our fields to proper maturity for wintering, despite the lateness of planting. By such a course, and only by that course, can the fly be successfully checked.

Thus, instead of planting the first week in September, we should plow and thoroly work our fields, so as to produce a finely pulverized, compac

MUTILATED TEXT

by the wood from the vinegar be detrimental? R. G. L. Newcastle, Pa.

An old vinegar barrel is suitable for storing concentrated lime-sulphur solution. I have used them many times for this purpose, and am using one-half dozen of them now with good results. I make all my lime-sulphur solution during bad weather, and store it in any open-headed barrel until I want to use it, thus saving time. I, of course, store it in the concentrated manner, and do not dilute it until I am ready to use it. I also use oil barrels.—Prof. H. A. Surface, State Zoologist.

SOME "BUG BEARS"

The farmer, the market gardener or even the village resident with only a small plot of ground at his disposal starts out on the first approach of spring to plow, prepare and plant his garden or acres, as the case may be, with high hopes of success. The soil may be ideal, he may prepare in the best manner, use the best plants or seeds obtainable, use scientific methods of manuring and fertilization, climatic conditions may be good too; and seeds may be planted at just the right time. If the grower is setting plants equal care may have been observed in preparing and planting. all may start to grow, not a plant be missing. The future looks bright but troubles in the form of insect pests sooner or later begin.

Asparagus Beetle

There are two bugs that infect the asparagus plant and while they have distinct names and can be easily told by their looks their deviltry is about the same and the remedy for both is similar. One of these is the ordinary asparagus beetle while the other is the twelve-spotted asparagus beetle. While they do not do a vast amount of damage to cutting beds except where entire green grass is cut they do a vast amount of damage to young planted beds. They begin feeding on the young and tender parts of the plants. Later one can observe the stalk all speckled with eggs. In a few days, if the weather is warm, these eggs hatch and the young begin operations at once, seeking the more tender parts of the plant on which to feed.

If these insects are allowed to go unmolested the vegetable part of the plant will soon be destroyed. On young planted asparagus beds this is dangerous. The life and future usefulness of an asparagus bed depends almost wholly on its care and management before cutting begins. If allowed to become stunted from any cause its future usefulness is impaired and if badly damaged by bug depredations it will die; hence the grower must see to it that these insects and their young are destroyed. If the planting is small and poultry are allowed to roam at will thru it they will keep it clean until it gets quite tall; otherwise the grower must resort to poisons and now is the time to use them.

These insects are chewing insects, hence poisons kill; the only question being the effectiveness of the poison used. The asparagus plant has a peculiar fern-like foliage that is hard to penetrate and upon which it is hard to make applications of spray mixture stick. I have used paris green with fair success but it does not stick in case of a rain, neither does dry arsenate of lead. The most successful material I know of is 6 pounds of arsenate of lead paste to 50 gallons of soft water. Use plenty of the mixture and drive it into the foliage with high pressure. If this mixture can be applied 24 hours without any rain it will stick from 10 days to 2 weeks; in fact, it will be new growth that will have

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to be sprayed next time. No definite advice can be given as to amount or number of sprayings. Spray when bugs are on the plants in sufficient numbers to do damage. One season one spraying may do the work; another might require three, but in any case keep the insects killed or disaster will follow.

The Squash Bug

There is another bug that attacks squashes, cucumbers, cantaloupes and allied plants, commonly known as the squash bug and it is far more troublesome than the asparagus bugs. A perfect stand of any of the above named plants may be ruined by the squash bug in a full day's time. Poisons do no good. The insects work early in the morning on the under side of the leaf and the only remedy is a repellant. Almost anything with an offensive odor will drive them away; also anything of a floury nature, such as air-slaked lime or very fine land plaster. Mix with this a sufficient amount of crude carbolic acid to give an odor and dust on the young plants and on the soil under the plants just as soon as bugs appear. One can not be too quick. He may be compelled to apply this remedy to cantaloupes even on Sunday morning knowing that failure to do so will mean that the planting will be lost by the next morning. I have also used with success fine dry ground fish scrap. Where this is available it is desirable to use it because nothing is lost but the time in applying it; it is a good fertilizer and the plants will later utilize it. A close watch on the young plants and quick action must be the watchword. One or at most two applications are all that is needed for these insects.

The Cutworm

The cutworm is very troublesome under certain conditions and in some sections particularly. When the cutworm is discovered or suspected at a point where hay or legume crop has been plowed down the grower should mix together 1½ pounds of Paris green and 50 pounds of good sweet wheat bran, mixing and applying it dry, as it lasts longer and does better work. Apply in the field before the crop is growing. The worms being hungry at this time will devour it and die. Do not wait until damage is done. These pests are too lazy to move when their stomachs are full and once they are located among plants poisons do but little good.

The Potato Bug

Last but not least there is the potato bug and when plants like the tomato and eggplant are planted where numbers of these hard shell bugs can get at them, considerable damage is soon done. Poisoning may help but they will not entirely eliminate the trouble, especially when the bugs occur in large numbers. There are so many working at one time that by the time the poison kills all a sufficient amount of chewing has been done to kill the plant [illegible]. The grower must resort to hand picking where these pests appear in quantity. Hand picking of potato bugs has been practiced by tomato and eggplant growers in this section on large acreages with success.—C. C. Hulsart, Monmouth Co., N. J.

BUSH FRUITS

Raspberries.—In planting raspberries set plants in well prepared soil as early as possible in the spring, 3 or 4 inches deep, leaving the short cane above the surface. Planting distance should be 4 by 6 feet, or 5 by 5 feet if cross cultivation is desired. The first year the young canes will not grow very high, and should be pinched off about 2½ feet from the ground and but 3 or 4 allowed to grow. The second season will be a partial crop. Prune back in the spring with the hand pruners, leaving the branches about 6 to 8 inches long. As soon as the new canes, which come from the roots, reach a height of 3 feet pinch off the tips and allow only 4 to grow, but if the soil is light, thin to two or three. These canes will then branch, forming the fruiting wood for the next season. Prune back in the spring as before.

It is important that the number of canes be limited, because the plant will naturally throw out more than the roots can stand sapping the vitality of the plant and resulting in poor quality of berries. As soon as the canes have borne fruit they die and the sooner they are cut out and burned the better.

Red raspberries take the same treatmen as black caps and it is well to plant some of them. They do not bear as heavily as black caps, but they usually sell at a higher price. The purple berry is a very prolific bearer and is considered superior to either when canned. Its appearance is against it and does not sell well on the market.

For the raspberries, good varieties are: Black raspberries—Gregg, Plum Farmer, Kansas Black and Cumberland. Purple raspberries: Columbian Purple. Red raspberries: Cuthbert and London.

Blackberries.—Blackberries are a paying crop but are hard to manage, as the sprouts come up all over the ground. They are propagated by root shoots. The canes should be cut out between the rows and kept thinned in the rows. The best planting distance is 5 by 8 feet.

Dewberries.—The dewberry is a species of vining blackberry native to Pennsylvania. It is not grown much commercially because of the difficulty of keeping the vines within bounds and in picking the fruit. The best way to grow them is on an arbor about 18 inches high, but this is too expensive for commercial purposes. The only variety that is worth planting is the Lucretia.

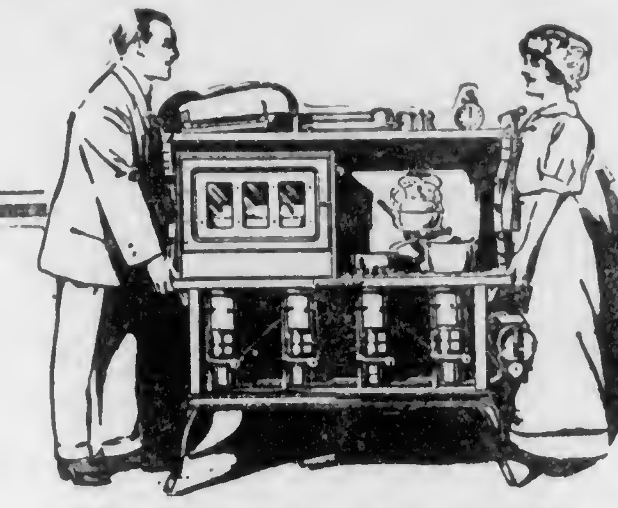
Currants.—Currants are not grown as much as an intercrop as they should be. There is not as much difficulty in harvesting currants as with other small fruits inasmuch as they remain on the bush two weeks after ripening without damage. Good prices are always obtained, because the supply never equals the demand. Plant in rows 5 feet apart and 4 feet apart in the rows. Keep thinned to 4 or 5 canes, cutting out one-half the number each year.

Good varieties are: Cherry, Fays Prolific, Wilder, Red Cross and Perfection.

Diseases of Small Fruits.—The essential things to keep in mind are preventative measures. Spray before the disease gets started, keep the plants growing and never allow them to become anemic, as this is the ideal condition in which to allow disease to get a start.

Anthracnose is one of the worst diseases of raspberries. Avoid getting plants from fields infected and cut out and burn all infected canes. Practice frequent rotation. Anthracnose also affects currants. It is controlled by using 5-5-50 bordeaux mixture applied thoroly. This will also control leaf spot.—H. G. Fassett, Wyoming Co., Pa.

Potato Diseases in New Jersey. Circular No. 33 of the New Jersey Experiment Station at New Brunswick, N. J., is a discussion of potato diseases in New Jersey, with suggestions as to their control, and contains some detailed discussion of the potato seed problem as it exists in Pennsylvania. Illustrations of the appearance of the different diseases on the tubers and also of types of fumigating houses, make the bulletin complete.



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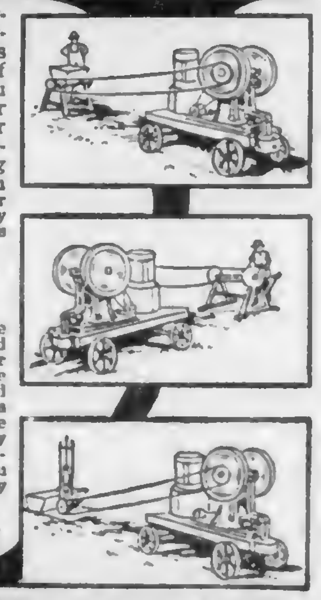

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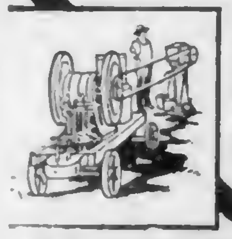

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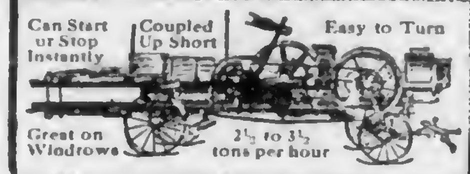

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Getting at Cost of Production.

By W. M. KELLY, New York.

It is difficult to get at the exact cost of producing milk. There are so many factors like soil fertility and the intrinsic value of various improvements in stock and equipment that evade appraisement. Many a dairyman appears to be making a profit from his cows, when in reality a missing link in the summary of his annual operations may conceal a source of loss that heavily taps the proceeds of his other farm operations. Viewed by the difference between the size of the milk checks and the cost of purchased grain feeds, the business may appear to pay, while actually it is consuming the profits from some of the other branches of farming during the term of years.

If we figure the cost of producing milk on an exact basis, and charge the feed and labor against the cows at current prices, but few milk producers could show a profit at the end of the year. The best test of the wisdom of feeding dairy cows, and their value as a factor in increasing the fertility of the farm, is found in the gain in the productivity and value of the property in a decade or more, if the income has been largely invested in the business.

While it is important on the farm that we should know what milk, potatoes and other products actually cost to produce, yet, we should take a broad view of the situation from the standpoint of the fertility of the farm, which comes in a greater or less degree from the presence of the cows. In this way we can look the situation squarely in the face, know what it costs to produce milk under normal conditions, and give the cows due credit for the fertility utilized by the crops produced on the farm.

PRODUCTS	Cash Paid Out For			Depreciation of Stock	Taxes, Insurance and General Repairs, Etc.	Total Cash Paid Out	Interest on the Investment	Produced and Used on the Farm in making Other Products				Total Cost of Production
	Labor	Fertilizer	Feeds, Seeds, Spraying					Manure	Hay, Silage, Pasture, Seed, Feeds, Etc.	Horse Keep	Family Allowance	
MILK	$ 36		$1,670	$425	$ 70	$2,525	$200		$1,640	$200	$ 80	$4,645
CORN	150	$ 30	10		20	210	60	$110		75		455
HAY	150	50	55		20	275	60	90		75		500
WHEAT	60	40	30		20	150	60	50		50		310
FRUIT	100	30	120		20	270	60	20		30	60	440
POULTRY	60		55		2	117	20		60	5	90	292
POTATOES	240	160	190		40	630	150	380	120	125	40	1,445
HORSE KEEP	81		60	75	30	245	60		200			505
SHEEP	40		10	10	2	62	10		120	5	20	217
TOTALS	$1,240	$310	$2,200	$510	$224	$4,484	$680	$650	$2,140	$565	$290	$8,809

COST SHEET—MARCH 1, 1912 TO FEBRUARY 28, 1913.

Is there any way by which the producer of milk can ascertain with a reasonable expenditure of time whether or not his cows or his crops are profitable? I think there is, and the plan I submit is one which separates the cost of production of the various products of the farm. I recommend this plan because it practically compels the owner to consider the exact distribution, in making up the cost of various products, of the indirect expenditures which are too often neglected. Some of these expenditures must be arbitrarily apportioned it is true and, altho some error may exist by this arbitrary apportionment, nevertheless the proposed method will get at the approximate cost of any product. Experience and observation have convinced me that the man who knows just what it costs to produce farm crops and finished products is always master of the situation.

For example, I submit a cost sheet I made in figuring the cost of producing milk and other products for a farmer who employed me in the capacity of farm adviser. This sheet was made up from his books for the past year and will give a very good idea of the actual cost of producing milk, potatoes, apples, wheat, corn and hay here in western New York. On this farm we find that the potato crop actually made the most net profit, but it was in a measure dependant upon the manure from the cows and the supply of organic matter from the roots and stubble of the hay crop, yet the liberal use of purchased plant food for the potato crop more than made good this dependence, because the fertilizer that was not utilized by the potato crop helped out every other crop in rotation.

The gradual addition of more plant food to the soil than is removed by the crop helped to balance up the supply for succeeding crops in the rotation. If the potato crop is omitted from the rotation the cost of producing milk would be greatly increased, and the net profits of the farm materially reduced. This is due to the fact that the potato crop affords a better distribution of labor and fertility, and that the use of larger quantities of the mineral elements of plant food tends toward a more economical use of the available supply of nitrogen, thus encouraging a better growth of wheat, clover and mixed hay. The growth of several crops on the farm and their reciprocal effect upon the soil and the net income from the farm can not be thoroly understood unless we keep a cost sheet and know what it actually costs to produce each crop.

In getting at the profits of farming I can not agree with a large number of economists who persist in distinguishing the business profits from earnings. This method only complicates the problem and makes it difficult to understand. Looked at from any standpoint the varied earnings are better understood if we regard them all as the returns from labor; returns marked by many peculiarities, among which the most striking are the risks and uncertainties, the wide range of market and weather conditions and the high gains from good management.

In most cases farming profits are separated from wages by considering as wages that amount which the individual would receive if hired by some one else. An efficient farmer's earnings are likely to exceed that sum; the excess is profits. Here emphasis should be put on the element of risk. Profits differ from labor because they are the result of the assumption of risk and are the reward for that assumption. To know exactly what you are really entitled to draw from the business it is necessary to study the facts carefully, avoid all fallacies, count in every expense, and get the price that will pay the profit. This is no small order, but if you have the courage to study the cost of each product and get at the real facts, you will be able, thru good management, to materially reduce the cost of each product on your farm.

SALES SHEET

March 1, 1912 to February 28, 1913.

80 gallons of milk per day for 365 days at 15c per gal.	$4380.00
14 veal calves	134.00
6 cows sold from herd	196.00
3640 bushels of potatoes	2548.00
243 bbl. of apples at $2.00	486.00
170 cwt. of apples at 50c	85.00
Poultry and eggs	318.00
Wheat 640 bushels at $1.10 per bushel	704.00
Wool, lambs & breeding rams	214.00
Small fruit, truck, etc.	72.00
Total products sold from farm	9137.00
Total sales as per sales sheet	$9137.00
Total cost of production as per Cost shee	8809.00
Leaving a profit of	328.00

This profit of $328 is found after deducting the total cost of production from the amount of the total sales. This comes after allowing the owner the difference between total cost of labor as per cost sheet and the amount he actually hired or $1,240 minus $760, leaving $480; interest on his investment, $680; pay for manure, $650; pay for hay, seed, pasture, silage, etc.,$2,140; and $290 worth of food for his family, or $5,093. So long as each crop and product is made to practically pay its cost of production we are on a safe basis, and good management can make a good showing for the year's business. When each crop and product is compelled to stand strickly on its own merits, we can trace every loss to its source.

The farm from which I have submitted the above cost sheet consists of 156 acres of land, about 43 acres in pasture, 10 acres in bearing apple orchard, the rest of the land being devoted principally to the growing of potatoes, corn, hay and wheat, a five-year rotation of crops being practiced. About two-thirds of the manure is applied to the sod ground in preparation for the potato crop, the balance is used to patch up the thin spots in the clover and grass seedings. The livestock consists of from 26 to 34 dairy cows, the number required to maintain a minimum production of 80 gallons of milk a day which goes to the city trade, 6 work horses, 24 sheep and about 300 hens.

In making up this cost sheet I have not attempted to get at the exact cost of producing each crop and product on this farm, but I have charged each crop and product what the owner and myself thought a fair amount, providing they were compelled to stand on their own merits. At first glance many would say that I am not charging enough labor against milk production, but further study will show that the labor is charged against the corn and hay crops, which are consumed by the cows, sheep and horses. It has been my aim to charge each crop and product maximum prices for labor, seed and fertilizer, so that thru good management the owner could materially reduce the cost of growing each crop and producing each product.

For example, I have charged the potato crop $1,445 for labor, seed, manure, horse keep, fertilizer and a part of the taxes and interest on the farm, while actually the larger part of this ost is being credited to the farm and the other lines of production. The oint I wish to make clear is that any times a crop or product that apears to be paying a fair profit may be apping the other lines of production heavily that it conceals a source of ss. Some crops and some products hat appear to be produced at a loss may more than make good this apparent loss thru their direct benefits upon the other crops or products which depend in a large measure upon them for their most profitable production.

In the case of milk production on he above described farm, the cows ave left a by-product, in the form f manure, worth at least $600 for use n preparing the ground for succeeding rops. The cows have stood on their wn merits and paid full price for their eedstuffs; therefore, it is only fair at we charge the crops which profit rom the use of the manure a reasonble sum for its use. This enables us o get more nearly at the exact cost f production so that we may know hich branches of our farming are aying the most profit. It also goes o show to what extent the crops proluced on the farm are dependent upon he presence of the cows. The feeding f livestock and the growing of the everal crops in rotation and the reciprocal effect of each kind of livestock and each crop upon the profits and fertility of the farm affords an interesting and profitable field for study and investigation.

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ADVANCING PRICES OF COWS

The eastern dairyman has a lot of things to guess about of late. I do not know but we have always been just as much uncertain about the future of our business as we are now, but it does not seem so. We have the high price of cows now to look after as well as the high price of feeds and labor. In addition, we have the possible imports of dairy products, or rather the probable importation of such products. Speaking of the price of cows, will say that they are high and it seems likely that they will remain so for some time. Possibly not so high as just at present, but we are not looking for cheap cows very soon.

The other day a dealer came along looking for cows. He stopped at a neighbor's and offered him $80 a head for what he had. My neighbor priced the cows at $100. The dealer said he had been out all day and those were the first cows he had found that he could buy at any price. He said that if he could find enough others to make out a car load he would be back as he believed the owner would reduce the price somewhat. One does not have to hark back many years to find cows offered at less than half the sum offered for these. All last winter stock was being shipped out by the car load. That was because of the dry season and the consequent shortage of feed. Now grass is looking fine, and that has much to do with the advance in prices.

There are more calves being raised than for some years, and it will not be surprising if there should be a surplus of stock in a few years again. At $75 to $100 for good cows there is not so much money in raising them after all. If one could be sure of getting good cows at that price he might about as well buy as to raise. Of this he can not be sure, and it stands us in hand to keep a purebred bull of the right stamp and raise what cows we need for our use at any rate. I know of some men who have started out to raise up cows to sell. That does not seem to me the part of wisdom unless, as in one such case, milking is practically out of the question, and something is needed to work up the roughage that is produced on the farm.—H. H. Lyon, Chenango Co., N. Y.

HOLSTEIN FRIESIAN MEETING

The 29th annual meeting of the Holstein Friesian Association of America was held at Chicago, Illinois, June 2 and 3. Members present represented 19 states, Wisconsin leading with 97, Illinois being second with 72 and Michigan third with 59. President A. A. Hartshorn, in annual address pointed out the growth of the association and presented promising conditions of breed affairs. There were 938 applications for membership in the past year. The association is now recording production of 55,000 cattle per year; total income from this source, $109 968.75. Total receipts during the past year were $172,775.97 and disbursements $175,723.30, of which $52,651.25 was invested in bonds. Cash on hand amounted to $153,012.11 and total cash in banks and in bonds, $205,663.36.

During the past year 9,722 cows were under test, 423 being for yearly records. For the 9,116 ordinary records, the average production was 402.8 pounds of milk, 16.68 pounds butter; average per cent fat, 3.55. Appropriations made for the year include $7,500 for special prizes at fairs and dairy shows; $15,000 for prizes for records made under the advance registry system; $25,000 for the work of the literary committee, $400 for scholarship in students' judging contest at National Dairy Show and $5,000 for representation at the Panama Pacific Exposition.

The following officers were elected for the coming year: President, D. D. Aitken, Flint, Mich.; treasurer, Wing R. Smith, Syracuse, N. Y.; supt. of Advanced Registry, Malcolm H. Gardner, Delavan, Wis.; secretary, Frederick L. Houghton, Brattleboro, Vt. The next annual meeting will be held at Syracuse, N. Y. A number of matters of especial interest to members was discussed. Full report, giving reports of various officers and complete minutes of session will be published and distributed from office of the Secretary.

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Poultry

KEEPING LARGE FLOCKS

I have recently seen nearly 300 hens in one flock, that returned the owner over $2.00 per hen. First he divided his poultry house into rooms for 40 hens, and had a separate yard outside for each flock. This man has business in the village close by that requires about 10 hours of his time every day. He found that feeding and caring for his hens when kept in so many divisions was too much work for him, so he experimented by keeping two flocks together, with the result that he had less work and got just as many eggs. Later he opened the division doors, and kept almost 300 birds in a flock, with no reduction in egg production. He now has 1,000 hens, kept in units of 500, and the labor of feeding them is reduced to a minimum by filling modern self-feeding hoppers with dry mash constituting a balanced ration, once a week. In the summer scratch feed of a mixture of grains, provides exercise.

There can be no possible benefit in separating hens by division walls or fences provided they are kept busy working for their feed; in fact, the healthy, vigorous hen that scratches all day apparently thrives better when there are many others around her, necessitating competition.

AN EXAMPLE OF SLIP-SHOD, BACKYARD POULTRY RAISING TO BE SHUNNED.

The poultry man I have mentioned did what every one can do, covered the scratch feed with the most convenient material and kept the hens a little hungry in the first part of the day so they would naturally be looking for something to satisfy hunger. Another has this litter for the floor very convenient by providing straw ventilation. Straw is stored in the loft over the henhouse. There are openings at the gables to let the air thru the straw to the hens. Fresh straw is easily pulled down to the floor any time when needed for the litter to cover scratch feeds.

We use alfalfa hay. We want to get the surplus hay fine enough to use as a fertilizer for our crops in the cheapest way, and know of no more economical method than to cover the henhouse floor deep with alfalfa hay and let the hens scratch it until it is broken into small pieces. In the morning we throw down a small quantity of grain and pitch the alfalfa in a big pile over it. A big flock of hens will work the hay over and over for a long time to find every kernel of grain. In a few days the alfalfa will be sufficiently broken up into bits and with the hen manure mixed thru it, is stored away for a fertilizer or spread on the land, and more alfalfa is placed on the floor. Alfalfa which has been used thus makes a very good mulch for the strawberry bed. It is all that can be desired as a fertilizer as it contains no weed seeds and retains moisture quite well. All poultry keepers should grow alfalfa. It is excellent poultry food, rightly used, and it is hardly possible to get maximum egg production without it; also it involves little cash outlay.

Briefly then it has been demonstrated that a division fence or partition is not an aid to increasing egg production, if each hen is kept busy. The point in the whole proposition of increasing the flock without reducing egg production, is to work out successfully the problem of compelling the hen to scratch for her living winter and summer.—W. H. Jenkins, Delaware County, N. Y.

PUTTING ON SUPERS

Beekeeping is such a mystery that one can hardly ever be sure that he has learned one of its secrets. What may seem to work in one locality may not work in another. And what may work with one colony will not work with another, each colony like each dairy cow apparently having its own individuality.

In the matter of putting on supers, the common practice is to study the flora of one's locality and then put on the supers just at the time when the honey flow comes on. This may be true for some colonies, but on the other hand, it may be altogether wrong for some other one. It seems to me that the number of bees in the colony is a better index to the time to put on the supers than is the time of the beginning of the main honey flow; for, if the brood chamber is not full of bees there is no use of giving additional room by putting on the super; they will not go up into it any way. Then again, if a colony is strong in the spring, has abundant stores, and weather conditions are favorable for brood rearing and the supers are not put on it is apt to get the swarming fever and give much trouble during the season.

I think that the proper time to put on supers is just at the time when the brood-chamber gets full of bees, even if it is in fruit bloom. This condition of any colony can be observed readily by simply lifting the cover and looking down between the frames. If there are several bait sections in the super and there is even a light flow of honey coming in, the young bees will go up in the super as the brood-chamber becomes crowded below, and when the main honey flow comes on, everything will be ready to receive it.

Then I think it is a good practice to put on another super after work has started nicely in the first one. This one should be put on the top and when the first super is about half or three-quarters full reverse the supers and usually this will put new vigor into the colony. One can tell whether a colony needs attention by observing closely at all times the activity at the entrance.—V. Ross Nicodemus, Bedford Co., Pa.

BROILERS FOR PROFIT

Women are especially adapted to raising broilers for the market according to Professor David F. Warner, of the department of poultry husbandry at State College. At the conference of women who are interested in agriculture and horticulture held at Ambler, Pa., Professor Warner said "Women are willing to take more pains and are more careful to look after details which are essentials to success in raising broilers for profit."

Women who were planning to take up this business were advised to begin on a small scale and learn the business before branching out. Care must be taken in selecting the breeding stock so as to get best results in shape, size and quality. There are three sizes of broilers sold in market. The squab size weighing ¾ of a pound, the small broiler from 1 to 1½ pounds and the large broiler at 1½ to 2 pounds. In special trade such as club rooms and wealthy people the average price is from 60 cents to $1 per pound, picked and 35 to 50 cents live weight. It costs 14 to 18 cents to produce a broiler weighing 1½ pounds not counting labor.

Incubators should be started early and the eggs collected often to prevent chilling and thus lower the rate of fertility. Sour skim milk is recommended as an excellent feed for chicks in the brooder. A good scratch food is cracked wheat 25 pounds, pin head oats 15 pounds, cracked corn 25 pounds. An excellent mash is made from the following formula: 6 pounds corn meal, 4 pounds wheat middlings, 2 pounds beef scrap wet with sour milk or sweet milk.—N. D. Hitchcock.

PRESERVING EGGS FOR WINTER USE

Many farmers find that it is good economy to pack down eggs for winter home use while they are cheap. The water glass system of keeping these is well known and very successfully used. Another system which seems to have some advantages over the water glass and is certainly much cheaper is to take one-half cup of quick-lime, mix it with water until it has come to what is known as a lime cream and pour it in one gallon of boiled, cooled water and store the eggs in this in the cellar, making sure of course that the solution covers all the eggs. Do not use more lime than is in the prescription as it is likely to give a flavor to the eggs. Recently I have found several city people who have made a practice for many years of buying eggs during this season and storing them for their own winter use for cooking and ordinary eating purposes. These little economies on the farm are worth while.—Prof. F. L. Stevens, in Lehigh Valley R. R. Bulletin.

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Live Stock

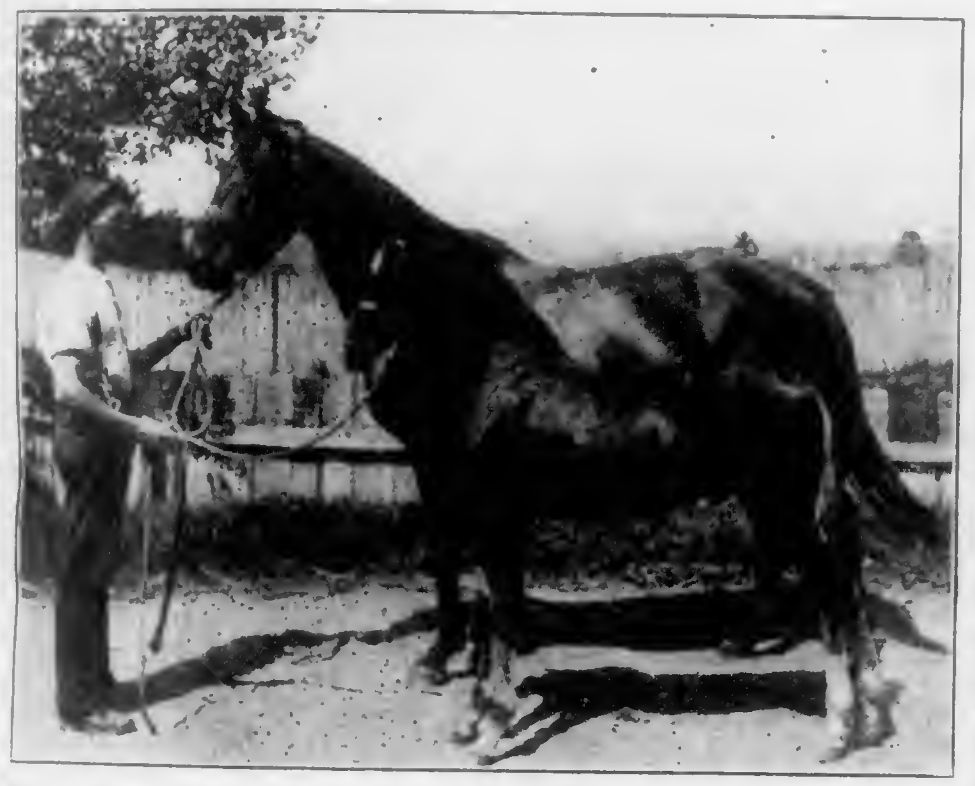
TRAINING THE COLT

Little Hints and Great Results

Every man who attempts any line of breeding wants to win out. Usually if there is failure it is charged to luck, but somehow I cannot shake off the impression that when I stumble and fall my eyes were not on their rightful job. In several years' horse breeding some simple lessons were forced home thru my failures, and therefore they cannot be forgotten. I want to pass them on to others as worthy of a test.

We found that it was useless to breed a mare doing little work for the winter and when grain fed until, with cooling mashes and reduced rations, and some work, we had cooled out the system and gotten rid of surplus fat. Then too, we found better success if mares were bred the very last of the period when they began to be cross and even kick some.

It was the rule with the stable that the care taker should be with every mare when she dropped her foal, and this paid in dollars and cents. In several instances we, in this way, saved a valuable colt. Before the colt was a half day old it was the duty of the man in charge of that stall to gently place his right arm under the quarter and the left under the shoulder and raise the colt off its feet. There would be a momentary struggle and as soon as all was quiet the colt was as gently lowered until well on his feet, and then given full liberty. By that one act the best of friendly relations were established and next to its mother, the colt would follow the caretaker. Instead of taking time it saved time, for never was there a shadow of fear after this one step, and, whether in the paddock or pasture, the man could go directly to his colt at any time.


STYLE AND INTELLIGENCE ARE TWO VALUABLE QUALITIES IN THE YOUNG ROADSTER

Seventy five percent of all the trials and troubles of the horse breeder are preventable. The trouble is that far too many leave their colts, as they do their children, until they are "old enough to have judgment" and then wonder why they are self-willed, obstinate, headstrong and ill tempered. If you would incline the tree you must bend the twig. When the time comes to halter-break, say when three weeks old, do not do it. Just slip on a nose halter, buckled just tight so it will not shake off, and let the colt run until thoroly used to it. Then, some morning, when you feel good natured, snap a rope halter into the ring under the chin. Standing off ten feet gently tighten the rope. As the colt feels it, he will probably attempt to jump back, rear, leap sideways and try to get away. Stand firm, hold a steady hand but do not pull, and when the colt moves up enough to slacken the rope unsnap and let him go. If you attempt to do more you will accomplish nothing except to aggravate him. Do not let him get the idea at anytime that you are not a friend. In a few days try the second lesson and probably you will, without much opposition, bring the colt to your side. It is then an easy matter to complete the work and have a colt that you can halter anywhere, at any time, and lead where you please.

Never force a colt to keep his mother company all day. She should be put to work when the colt is three or four days old, but not on heavy loads. Leave the colt in a safe, darkened stall, where he cannot injure himself and let the mare in to feed him once during the forenoon and afternoon, at noon and over night. It is easy to injure a young colt by forcing it to follow its mother all day on the road or at work.

The secret of success is never to teach a colt anything you do not want it to remember thru life. Never say "whoa" unless you intend your horse, or colt shall stop; and having said it, see to it that they do stop. If we would but spend moments doing what we want done we could save days undoing what we should not have done. If we want a safe horse make him so by first getting his confidence and then holding it by honest treatment. I have seen men teach their babies to make up faces, laugh with their friends and call it cunning and later seen the same father horsewhip his boy for making up faces in school. I have seen men tickle their colt's heels and laugh as "it just kicked" and later heard the same men curse their kicking horse and "it must have inherited it from some way back ancestor."

We are not half honest with our animals. If we were we would remember that they, like us, were first a bundle of susceptibilities and as we received impressions they grew into tendencies and these into habits and finally habits settled into characters. No man can tell how far he may go in correcting a bad tendency in a colt, but this much is certain: If we commence early and move slowly, teaching only what we want them to remember, there is little question but nine-tenths of our colts would develop into sound, safe horses and we profit immensely by this humane line of education. If the majority of us had been treated when young as so many treat their colts we would be known as mulish, stubborn, kicking, contrary fools.

One thing more, when you leave that colt in the stall, be sure there is a little sweet clover hay there, and a little box containing a few crushed oats and bran. These never hurt a young animal and the earlier the colt gets its nose into these the better for its growth. We want size, substance, courage, kindness, good disposition and style with an alert, snappy action, whether it be draft or driving stock, and all these depend as much on training, care and feeding as on breeding. If you want a good horse commence early to educate and feed and never forget the a, b, c period thru which some patient soul bore with you and helped you on to solid ground.

I like to see colts like the one shown herewith, and this colt, with others, was reared along the lines I have indicated. From the time he was six hours old he would follow the man who was with him at birth anywhere and never know a trick because not one was taught him. If you want large horses, commence early to feed them. If you want safe horses, commence early to educate them, and be careful to give only short lessons along the best line of future development. Never think of breaking a colt but always of educating.—Dr. G. M. Twitchell, Androscoggin County, Me.

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Philadelphia, Pa., June 27, 1914.

Fourth of July Next week the Nation will observe the annual celebration of the Fourth of July. The appropriateness of the celebration will depend largely upon the temper and customs of the various communities. These customs are undergoing constant changes, the most important of which is the safeguarding of the little folks from criminal carelessness in the handling of dangerous explosives. It is frequently charged that the modern Independence Day is lacking in the observation of the real significance of the day. Perhaps it is too much to expect that the lessons in patriotic devotion given us in the stirring days of '76 be appropriately impressed upon the succeeding generations and fittingly moulded into the young lives of today. But is not too much to expect that the day be saved from the reckless indulgences of a few years ago. The most convincing argument on how not to celebrate that we know of is the appended record of accidents in the United States due to the use of explosives in celebration of the Fourth of July. These figures are taken from the records kept by the Journal of the American Medical Association, as follows:

Year	Killed	Injured	Total
1904	183	3,986	4,169
1905	182	4,994	5,176
1906	158	5,308	5,466
1907	164	4,249	4,413
1908	163	5,460	5,623
1909	215	5,092	5,307
1910	131	2,792	2,923
1911	57	1,546	1,603
1912	41	947	988
1913	32	1,131	1,163
Total ..	1,326 ...	35,505 ...	36,831

A decrease from 166 deaths in 1903 to 32 in 1913 is due to more intelligent methods of celebration, the most marked decrease being in states where "safe and sane" celebrations have been enforced.

College Extension The enforcement of the Lever law, appropriating federal money to agricultural extension work in states, is raising a question of federal supervision of such funds. The state agricultural colleges have long been drawing money from the federal government under the provisions of the Morril act. This money has been definitely appropriated and there has been little occasion for supervision of its expenditure by the colleges. The support of the county agent system, however, is divided between states and the federal government, and it is reasonable to expect that the federal department must exercise a reasonable control over its share of such appropriations. A memorandum of agreement proposed for the acceptance of state institutions proposes that all extension work in agriculture shall be planned and executed under the joint direction and general supervision of the state directors and the federal officer in charge of demonstration work in the district in which the state is located, subject to the approval of the federal secretary of agriculture. This broad interpretation of the rights of supervision by the federal authorities over all extension money, even that appropriated by state authority, is borne out in all clauses of the agreement. However, the federal appropriation is the basis or original source of support, and state appropriations are supplementary to the fund designed for a specific purpose defined by federal law. Therefore, a limited federal participation in control of the fund is not only just but necessary for uniform management. It is understood that the federal department does not desire to have any part in planning the expenditure of purely state funds except as it feels compelled by the act to make sure that such funds supplementing the Lever funds are used in true extension work.

Borrowing Money The protracted discussion of the need of a rural credit system has tended to create the impression that all farmers are chronic borrowers. We have frequently expressed the opinion that the credit needs of the rural communities are too varied to be met by one general, nation-wide banking system. The need of lower interest rates in sections of the South and West, and the serious handicap which such rates place upon agricultural development in those sections are not to be minimized; but this need is solely for lower rates and the acceptance of various forms of farm property as security for loans. The agitation for easier credits has created the impression that the farmers are clamoring for easier methods of borrowing money and mortgaging their farms. There is as much fallacy in this impression as in some of the systems that are being proposed for the farmers' relief. A recent Farmers' Bulletin issued by the Department of Agriculture presents a number of rules to be observed in borrowing money which are applicable at all times and which should be borne in mind under all systems of credit. Five rules for borrowing money are laid down. The three most important are: "Make sure that the purpose for which the borrowed money is to be used will produce return greater than needed to pay the debt. The length of time the debt is to run should have a close relation to the productive life of the improvement for which the money is borrowed. Provision should be made in long-time loans for the gradual reduction of the principal." The business principles underlying these three rules will be found to conform closely to the three-C rule of the banking profession. This rule to which all applications for loans are supposed to be subjected gives consideration of the capital, credit and character of the applicant. The capacity of the applicant to make profitable use of the borrowed money is the surest guarantee that he will meet interest payments and the principal. From the standpoint of the borrower the safest guide to the safety of the loan is the assurance that the earnings of the money borrowed will repay the loan. The late Pierpont Morgan, when testifying before a Congressional investigating committee, declared that the value of a security did not depend so much upon capital and credit as upon the character of the security holder, and this applies to farm credits as well as to railroad finance.

Sugar Cane Quarantine The U. S. Department of Agriculture announces a quarantine prohibition against the importation of living sugar canes, cuttings or parts of cane from foreign countries, Hawaii and Porto Rico. This action is declared necessary by the discovery that these canes are likely to be infected with insect pests and fungous diseases. The vigilance of the Department officials in preventing the importation of insect and fungous pests has been of great service to the agricultural industry of this country, but in this case the precaution taken would seem to be a bit superfluous. It would be difficult to convince the American cane growers that any foreign fungus would be more destructive of their industry than the free sugar clause of the recent tariff law. The sugar beet growers of the North might prefer the insects and fungus to the legislative blight. Farmers frequently win in a fight against bugs and bacteria.

STATE CAPITAL NEWS

Status Of Auto Fee Suit.—The state's fiscal officers will appeal to the state supreme court from the decision of the Dauphin County court holding that the act appropriating the revenue from automobile licenses to the highway department for road maintenance is constitutional. The officers who took the appeal declare that their action is forced because of the importance of the question involved and this is the excuse given for action which may result in prolonging the repair of roads which are in such condition that they are in many places a public menace. Under the rules of the supreme court the appeal must be filed by June 29. There does not seem to be any disposition to file the appeal before the last day and as the supreme court will meet within a few days after the time expires there will be no opportunity to get the printing and other details arranged so as to proceed to immediate argument. Then court will not sit again until October. The highway commissioner has apportioned money to each district, engineers and superintendents have been told how much each is to spend and in some districts men have actually been told to be ready to go to work and stakes set for repairs. If the Tener administration can develop a man big enough to sweep aside the attorneyisms it will do much to rehabilitate itself in the minds of dwellers in rural districts.

For An Agricultural Exhibit.—The removal of the battle flags from the State Museum to the rotunda of the Capitol, which took place a week or so ago, leaves space in the Museum building available for some display of interest to the agricultural interests of the state. The museum contains much of historical, industrial and educational value. Models of agricultural implements, growths of fruits and grains and even samples of soils and results of scientific cultivation might be added to the collection with profit to visitors. In any event some regard for the great agricultural interests would be fitting and exhibits might well replace some of the junk which has been dumped on the state and given space under the mistaken idea that it must be displayed.

Less Rural Typhoid.—Statistics gathered by the State Department of Health in the last year show that there has been a marked decrease in the number of cases of typhoid fever in rural districts and that people are now complying with regulations prescribed by physicians in the treatment of such cases. Some of the reports show that precautions unknown ten years ago are now being taken and that the cases resulting fatally are also declining.

State Aid Contracts.—The contracts let a few days ago by the State Highway Department for construction of roads were on the state aid plan, this being the only object for which the Highway Department has any money at present. It is probable that several additional contracts will be let within a month, estimates having been approved by county commissioners in over a dozen counties.

Fires In Hay Fields.—Inquiries as to what redress farmers have against railroads for hay destroyed thru sparks falling in fields have been coming in at the office of the Public Service commission, but thus far nothing has been worked out along that line and the letter writers are referred to the railroad claim agents. It is probable that next session when bills are presented to provide for damages from forest fires caused by engines that the agricultural interests will demand some protection. Some of the letters sent in declare that people can not grow hay in fields along railroads because of the danger from sparks while it lies on the ground and that stubble frequently catches fire and endangers fences and buildings.

Hessian Fly Ravages.—State Inspectors who have visited eastern counties where the hessian fly and other wheat pests have been reported say that in a number of cases the fly has ruined fields of wheat and that steps will be taken immediately to give instruction to farmers in the districts so that they will be given the benefit of the state's experts.

Hunters' Licenses.—The 1914 hunters' license blanks are being issued by the state to county treasurers. They are effective September 1.—Hamilton, Harrisburg, June 22.

NEW JERSEY FARM NEWS

Horse Notes.—The Monmouth County farm bureau has inaugurated the plan of having school boys study the judging of horses of the draft type. Most of the horses studied were taken to school by the boys. Thousands of Western farm horses are sold every year to New Jersey farmers, and, it is hoped to train these boys to become intelligent purchasers. A number of farmers already have horses from New York, Philadelphia and other large cities turned out to pasture. They have found this a profitable business, and, at the same time, the fertility of their farms is greatly increased. The dates for the Monmouth County horse show at Long Branch this summer have been fixed for July 22-25. A committee has been appointed to prepare the prize list and select judges for the various classes. Over $6,000 will be offered in prizes.

Scarcity Of Menhaden.—Menhaden, which has been used as a fertilizer ever since the aborigines taught our forefathers how to use them, have suddenly become very scarce in our coast waters. Whereas they formerly came in schools by the millions, they are running in such small quantities that the fish factories have been obliged to close. In their stead, the farmers have resorted to the use of nitrate of soda, several carloads of which have been disposed of at each distributing center.

The Potato Crop.—Potatoes, altho planted a little late, came up well and never looked better at this season of the year. This year, there has been no frost damage as there was last. About 6,600 bags of seed potatoes were shipped into Elmer from Maine this spring costing the farmers around $20,000. It is estimated that about 1,000 bags of these have been put in cold storage for planting in August to grow second crop seed. It is probable that more home grown second croppers have been planted this spring than ever before. Salem, Cumberland and Gloucester county tuber growers, alone, expended at least $100,000 for northern grown seed potatoes.

Another College Farm.—About 25 acres of the farm of Nathaniel [illegible] near Madison, have been leased by the agricultural department of Columbia University for the purpose of demonstrating scientific farming. Dr. O. S. Morgan, professor of agriculture at Columbia, who originated the idea, made arrangements for the use of the tract, in order that Columbia students who have taken his course might try their hands at actual scientific farming. It is the idea to do plain farm work, nothing of the experimental station idea being contemplated. The University will establish in Madison a summer school of agriculture for the convenience of students taking the regular agricultural course in the university.

Crop Prospects Good.—Prospects are good for the largest crop of tree fruits that has occurred in New Jersey for a number of years says Professor M. A. Blake, of the State Experiment Station at New Brunswick. He states that the quality of this crop, however, will be largely determined by the efforts of the fruit growers. The orchard should have been plowed and well harrowed before this. Keep the soil free from weeds and in a mellow condition by frequent cultivation until August 1, and then sow a clover crop. If trees do not show a vigorous dark green foliage, apply 150 to 200 pounds of nitrate of soda to the acre, in addition to 200 pounds of muriate of potash and 400 to 500 pounds of a good mixed fertilizer, and if they still lack vigor, give an additional application. About June 15th to 20th, thin peaches to 5 or 6 inches apart, and pears and apples one fruit to a spur. Spraying for the control of codling moth, curculio and other enemies should have been done already, and upon fall and winter varieties of apples and pears, don't forget to spray again the last week in June. The second brood of codling moth may cause much damage otherwise.

Potato Warning.—Powdery scab, a serious European disease of the potato, which has attracted attention during the past year, probably has been introduced into New Jersey. Potato growers have been advised in a bulletin to examine their crop from time to time and report indications of the disease to Dr. Mel T. Cook, plant pathologist, New Jersey Agricultural Experiment Station at New Brunswick. The United States department has established a quarantine on the Maine potatoes to take effect August 1. After that date all Maine potatoes will be sold under United States inspection.

No Gypsy Moth.—Dr. Thomas J. Headlee, State Entomologist, declares that the alarm felt over an invasion of the Gypsy Moth into New Jersey is unwarranted. "This office has investigated conditions at Westwood, Hillsdale, Wool Cliff Lake, Allendale and other points from which complaints had come regarding the Gypsy Moth," he states. "We find that the insect is the tent caterpillar, which this year is very common in a wide district and numerous in wild cherry trees."

State Accepts Extension Money.—The provisions of the act recently passed by Congress which makes available an appropriation of $10,000 for New Jersey for co-operative agricultural extension work have been accepted by Governor Fielder. The first appropriation under the law is for the fiscal year beginning July 1, 1914, and amounts to $10,000. Each year thereafter $10,000 is again appropriated for the several states, provided it is accepted by the legislatures. After the first year an additional sum of $600,000 is again appropriated, which sum is increased each year for seven years, until it reaches the amount of $4,100,000. The additional appropriation is not available to the states however, unless their respective legislatures appropriate a sum equal to that received from the Federal Government. The apportionment of the additional appropriation will be based upon the proportion which the rural population of the state bears to the entire rural population of all the states. This work is to be carried on in such a manner as may be agreed upon by the Secretary of Agriculture and the state agricultural colleges.

New State Federation.—The objects of the State Board of Trade and Commerce are to take concerted action on state wide problems, to make the federation a clearing house for the latest thought and experience in civic and commercial work, to analyze and take constructive steps in regard to such matters as agricultural and industrial development, civic and social conditions, waterways, city planning, good roads, municipal research, community publicity, vocational education, retail credits and many other lines of activity; to advance the prosperity and prestige of New Jersey thru the increased efficiency of its several communities, and to build up public opinion that truly reflects sound economic principles. It is understood that steps will be taken at once to investigate such rural problems as consolidation of schools, transportation of pupils, purchase of school supplies, salaries and cost of living of country school teachers, marketing and transporting of farm produce, co-operative purchasing of fertilizers, seeds and farming utensils, farm and domestic help, libraries at convenient local centers, etc. This work of investigating will be done by trained experts.

Road Commissioner Makes Statement.—Accepting the full responsibility for any apparent delay in approving contracts for road building, Colonel Edwin A. Stevens, state road commissioner, has made a statement answering the charge that road money is being held up. In accordance with instructions received from Governor Fielder and the state controller's offices, Colonel Stevens admitted that the practice of approving contracts before the appropriation therefor becomes available, would be discontinued. In the past it has been customary to approve contracts for roads to be built with the appropriations becoming available at the beginning of the fiscal year, November 1. Governor Fielder and the state controller concluded that this practice, which is contrary to that pursued in state departments generally, was contrary to the spirit, if not the letter, of the law. A recent report shows that in 5 states having a large mileage of improved roads, the average attendance of enrolled pupils in 1908-09 was 80 percent, while in 5 other states without improved roads the attendance during the same period was 64 percent. The difference may not be wholly attributable to the roads, but poor roads undoubtedly keep the children, especially the smaller ones, from attending school.

Cattle Inspector's Report.—"Tuberculosis in meat animals has decreased from 19 to 11 percent since last year," declared Charles McNabb, who is in direct charge of the work for the department of agriculture. "Since the first of January, we have been killing what will run into probably 1,900 cases this year. This will show you the great number that were killed, when the percentage was up to 19."

State Game Farm.—The fame of the State Game Farm at Forked River, Ocean County, has spread to the United States Government and to several other states of the Union. Charles E. Brewster, game law expert, of the United States Department of Agriculture, Bureau of Biological Survey; Dr. Joseph Kalvfus, Game Commissioner of Pennsylvania, and J. Quincy Ward, Fish and Game Commissioner of Kentucky, were guests a few days ago of President Ernest Napier, of the New Jersey Fish and Game Commission, at the State Game Farm. As a result of his visit to the farm, Mr. Brewster has written President Napier as follows: "During my visit to the State Game Farm at Forked River, I saw many evidences indicating success along lines or hertofore doubtful possibility that I have decided to write a report of the matter to the Chief, in order that the information obtained there may be filed for future reference in the office record of this bureau."

Fewer Forest Fires.—Effective work on the part of the New Jersey State Board of Forestry has decreased the number of forest fires in this state to a considerable extent, only two serious fires having occurred this year. One of these destroyed about 1,000 acres of woodland, while the other wiped out about 2,000 acres. With 260 fire wardens scattered thru New Jersey and with the assistance of the citizens, forest fires are on the decrease. While the department has a line on most of the sources from which the fires spring, they lay most of the blame to the railroads and automobile parties.

Monmouth Poultry News.—Dr. Robert Dickson, of Fair Haven, has been appointed superintendent of the pet stock department of the annual exhibition of the Monmouth poultry club, which will be held Thanksgiving week at the Asbury Park Casino. William B. Patterson, of Red Bank, was appointed judge and handler of the pet stock. Wellington W. Kennedy, of Red Bank, was appointed superintendent of the pigeon department of the show. William Stanton, of New York, will judge the pigeons. Elmer Carr, of New Egypt, state bee inspector, will be superintendent of the bee department and he will be assisted by Charles H. Root, of Red Bank. The club decided to start the show on Wednesday, November 25th, and it will be continued until the following Sunday night if the Asbury Park officials will permit them to hold it on Sunday. If not the show will close Saturday night. The annual banquet of the club will be held on Tuesday night, December 1st, at the Globe hotel, at Red Bank. Charles E. Hendrickson, Jr., will be assistant superintendent. Frank Hodges will be secretary and Howard A. Rogers will be assistant secretary.—D. T. H.

NEW YORK LETTER

Brick To Be Made At Elmira.—Tests have been made of the shale on state lands at Elmira reformatory, as to its availability in making vitrified brick for road construction, and the reports are favorable. Commissioner Carlisle is at work on the plans for the brick-making plant and it is said that it will be ready for operation by next fall. The plant will be capable of turning out 15,000 brick a day.

The State Fair.—It looks as if there would be some "big guns" as speakers at the state fair this fall if present plans materialize. It is the purpose of the commission to invite President Wilson, Secretary Bryan, ex-president Roosevelt, Charles S. Whitman, Gov. Glynn and other lesser lights. The fair will be open evenings and fireworks, with an illuminated chariot race, will be the attractions.

After The Farmers.—The town superintendents of highways are finding fault with the farmers in some sections who, in plowing their fields adjacent to the roadways, often plow across ditches at the sides of the roads, and thus prevent proper drainage. It has become necessary for the state highway department to issue a warning to farmers against this practice. It is believed that calling attention to the matter will be sufficient.

The Farm Brokers.—At the annual meeting of the Farm Brokers' association of the state held at Ithaca recently, it was voted to discourage dishonest representations of farms and a strictly brokerage commission was agreed on instead of opposition methods. The following officers were elected: President, E. J. Webb, Beacon; vice-president, W. H. Hazard, Salamanca; secretary, J. H. Fort, Oneida; treasurer, F. C. McCarty, Auburn. The association will meet in New York City next year.

Farm Train.—In order to educate the fruit growers of the western part of the state in the methods of packing and grading apples as required by law, a demonstration train will be run over the lines of the New York Central, the state department of agriculture co-operating. One of the cars will be adapted to lectures and another to the demonstration of correct methods in packing fruit.

The Forestry Faculty.—Owing to the demands of the college of forestry at Syracuse and the expansion of its work, three new members will be added to the faculty at the opening of the fall term. These are Dr. C. C. Adams, of the University of Illinois, Prof. J. Fred Baker, who is now studying at the University of Munich, Germany, and R. P. Prichard who has been at the head of the Rangers' school at Wanakena. The student body now consists of 218 young men.

Active Farm Bureau.—The Jefferson County Farm Bureau, the Pomona grange, the County school superintendents and the U. S. Department of Agriculture are co-operating in the corn and potato contest in which over 200 boys and girls are enrolled. There have been registered 40 boys who will each grow one acre of corn and 98 boys and girls who will each grow a quarter acre of potatoes. There are 35 boys who will grow and exhibit ten ears of corn and 30 boys and girls who will grow and exhibit a plate of 10 potatoes each. Moneys to finance operations are being raised by subscriptions by the Pomona and subordinate granges. The round up will be held in December at the meeting of the Pomona grange.

Co-operation Bureau.—There are now 31 co-operative societies in the state organized under the Cole act, and these organizations, together with other such organizations having a common purpose, will meet in Albany sometime next month. "The work of organization of these co-operative societies is going on conservatively, in accordance with the consensus of opinion of those present at the conference held early this month. There is a constant and growing demand on the Bureau for speakers to take up the subject of co-operation in its phases, particularly in the granges of the state.

The Fairs Get Money.—Most of the county and town fair treasurers have by this time received the moneys due them by the state for premiums paid. There was a legislative appropriation of $250,000 for this purpose and checks have this week been forwarded to the 88 associations that are entitled to share in the state moneys.

Fruit Growers' Excursion.—A somewhat elaborate plan has been laid out for the enjoyment of the members of the State fruit growers' association and their friends in late July, on the occasion of the annual summer meeting. A special train will convey the members and others from Rochester, starting on the afternoon of July 28. The itinerary to be as follows: Rochester to Saratoga Springs, to Lake George (excursion on lake) to Ausable Chasm; to Lake Champlain (excursion on lake) and across to the Vermont side with a side trip thru the Champlain orchard section, thence to the Thousand Islands with an excursion thru the islands, thence to Rochester. The trip will cover three days. In the evenings there will be talks on timely subjects pertaining to horticultural interests.

Milk Experts.—The annual meeting of the American Association of Medical Milk commissions was held in Rochester June 20. Dr. John W. Kerr, assistant surgeon general in the U. S. Public Health Service, is president of the association. There were addresses by national authorities on the medical milk question. The certified and market milk contests were features of interest. There were certified milk entries from 12 states. Among the entries was a sample from El Paso, Tex., which contained but 1,000 bacteria to the cubic centimeter. A government expert has been in the city for several days testing the milk.

Short Notes.—The fifth annual convention of the New York State Waterways association will be held in Rochester in September, beginning the 24th and continuing three days. The third annual meeting of the Farm Brokers' association of the state was held in Ithaca this week. Prof. Warren, of Cornell, Hon. Marc Cole, of Albany, Col. C. A. Simmons, of Ithaca, Prof. Martha VanRensselaer, of the Department of Home Economics of Cornell and Prof. Mann, of the Agricultural college, gave addresses. Early indications are that the grape crop will exceed last year's in the grape belt. The crop may run 4,500 cars. There are 45,000 acres in vineyards in the belt.—D.

MARYLAND NOTES

Liquor Law Violated.—The new law which allows only one gallon of liquor to be shipped to an individual a month in some of the Eastern Shore counties it is claimed is being violated. Persons have been arrested for bringing in a supply, not shipped, and the validity of the law in consequence is questioned.

Crop Indications.—The protracted dry spell continues. One or two very light rains occurred during the past 10 days. The weather is cool, especially the nights, and corn and other crops are growing slowly. The hay crop thruout the state is mainly harvested and has been secured in excellent condition, ideal weather prevailing for hay making. Wheat seems to be unusually good, but straw somewhat short. In Kent, Washington, Frederick and Carroll Counties the farmers are bragging about their wheat crops. In Cecil County the dry spell has been disastrous to the hay and oat crops, and the huckleberry and blackberry crops threaten failure. The strawberry season has been only a moderately fair one, bugs and drouth seriously affecting the second ripening of the fruit. In Caroline County the pea canneries are running full time and even at night, as the hulling machinery was inadequate to keep pace with the huge loads delivered. The crop was better than expected.

New Creamery Projected.—Arrangements are being made to establish a creamery in Princess Anne. Goldsboro milk station is developing bigger business than was anticipated, notwithstanding unfavorable weather conditions.

Gardeners' Club.—The Gardeners' Club of Harford County has been organized with Mrs. Bertram Stump as president. The object of the Club is to encourage garden planning and planting, and to increase the interest of its members in all horticultural pursuits. It starts off with a large membership of the leading women of the county.

Chestnut Blight Ravages.—The blight of the chestnut trees in Frederick county is becoming serious. At Braddock Park many chestnut trees have been ruined and have been cut down.

National Institution Buys Land.—The National Vaccine and Antitoxin Institute of Washington, D. C., has purchased a 54-acre tract in Montgomery Co., and will expend $25,000 in buildings and other operations.—G. O. B.

A Boys' Fourth of July Party.

By JESSIE K. BURCHARD.

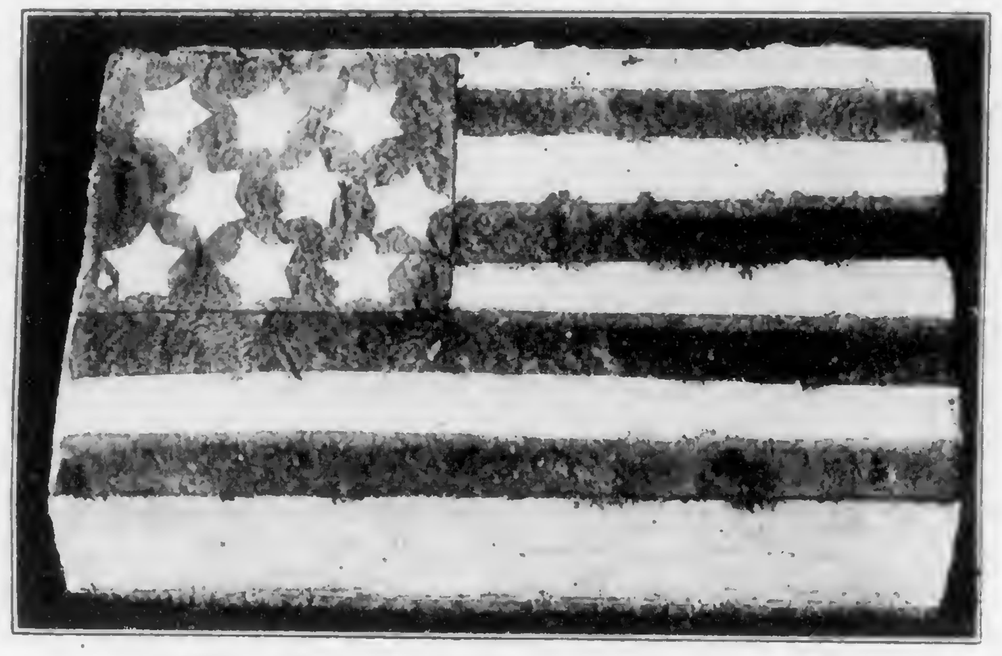
Eleven small boys were invited to help celebrate a playmate's birthday which fell upon July fourth. The invitations read "James Brown invites you to take part in an athletic meet in his back yard, on Wednesday, July Fourth, at three o'clock."

On the appointed afternoon the yard was gay with flags, the fences were draped with red, white and blue bunting, and the "events" were set forth on a large piece of wrapping paper, which was tacked to the side of the house. A similar sheet blank, was tacked beside it to record the winners.

The first event was the standing broad jump. A big neighbor boy measured the distances carefully, and the winner's name and the length of his jump were written aloft with great ceremony. The big boy was invaluable also in keeping the peace when excitement waxed too high for comfort.

The next event was rolling a big indoor baseball over the short clipped grass. No throwing was permitted.

After this came an old fashioned potato race, a row of twelve potatoes, two feet apart, being alloted to each boy, who was provided with a teaspoon, with which he had to carry the potatoes, one at a time, to a pan which stood at the end of his row. This is always productive of lots of fun, and the winner finished in fifteen minutes, while the last boy took nearly half an hour.



SPONGE CAKE FLAG FOR BOYS' FOURTH OF JULY PARTY.

Then came the running jump contest, and after that a few boys succeeded in walking on their hands a few steps. For all these events prizes were awarded, these being of boxes of candy, tied up with red, white and blue ribbons.

Then there were relay races, and a tug of war, after which the young athletes were invited to wash their hands and repair to the dining room. The room presented a very patriotic appearance, with streamers of red, white and blue extending from the ceiling to the corners of the table. The centerpiece was a fort built of blocks, and surrounded by tiny cannon, which were given as souvenirs at the end of the feast.

Cannon crackers filled with candy were at each place, also a bunch of little chocolate fire crackers, wrapped in red. Peanut butter sandwiches were rolled, and tied with patriotic colors. Plain ham and tongue sandwiches had a tiny flag stuck in each. The beverage was a lemonade, colored red with red raspberry juice, and cool, but not iced.

The ice cream was vanilla molded into blocks with red raspberry ice, and was served with a flag flying from each block. With this came the greatly admired cake, shown herewith, that looked like a great flag. To make it a sponge cake batter was baked in a sheet, iced with a plain boiled icing, and the stripes laid on with red vegetable coloring, while the square for the stars was of violet, no blue vegetable color being obtainable, and the stars were cut out of white paper, and applied with a drop of soft icing. As it seemed impracticable to get all the red and white bars, and all the forty-eight stars onto the cake, we used only eight bars an nine stars. The red color ran into the white so annoyingly that to make the bars any narrower, would prevent having the white stripes clearly defined, so we decided to sacrifice fact for effect.

ALL KINDS OF CURRANTS

Their Use In The System

Black, white and red currants will soon hang in clusters awaiting gathering—at least they ought to be thus ripening in all farmers' gardens. A good row of currants means more than appetizing jellies, jams, conserves, pie-timber and juices for syrups and refreshing beverages. It means better health for the families which use the dietetic virtues of the currant in their food. In our June 6 issue we told you how the characteristic acids of fruits are organic acids, which burn to a pure white alkaline soda ash in the system, and thus prevent that accumulation of acid which causes a whole lot of aches and systematic derangements.

The acid of the strawberry, you may remember that we told you, is malic. That of the currant is tartaric, which is also the characteristic acid of the grape. Currants contain about 5.8 percent of acid and 1.96 percent of sugar, as compared with 1.2 to 5 percent of acid, and 10 to 16 percent of sugar in grapes. The sugar in currants consists of what chemists call "reducing sugars," because they are the forms of sugar to which cane and beet sugar and all starches have to be reduced before they can be assimilated. These reducing sugars are mainly grape sugar and fruit sugar. So we see that the sugar in currants is practically all ready to be taken into the system directly. And as sugar is a food because it is an energy or fuel maker, currants thus have some real food value as well as the dietetic or medicinal value afforded by their acid and mineral content.

The fuel or carbohydrate content of fresh red currants (which consists mainly of sugar) is about 12.8 percent. The tissue-repairing or protein content is 1.5 percent. The mineral or ash content is .7 percent, and comprises, in the order of their amounts, potash, phosphorus, lime, magnesium, sodium, chlorine, sulphur, and just a trace of iron. There is no fat, but there is a lot of water, about 85 percent. These minerals, particularly potash, phosphorus and sodium, are very necessary factors in the chemical conversion of all kinds of food into blood and tissue and heat and energy in our bodies, and the lime is mostly needed for our bones. Hence, we see that the minerals so readily available in currants and all other fruits are important reasons why fruits should form a liberal portion of our diet.

Black currants are a little richer in food material than red or white because they have a little less water (79 percent), and they also have 13.1 percent of sugar, 1 percent of mineral matter, a little fat (.3 percent), but less protein (only .5 percent). Of the mineral ash, there is a little more potash, phosphorus and lime than in red currants.—Harriet Mason.

Some Ways to Serve Them

(By Marion Harris Neil)

Black currant jelly well set, with perhaps a little gelatin added to its juice in making, is the finest substitute for voice lozenges. This juice is actually added to medicinal lozenges for voice clearing. It can be made at home quite well, in this way, to act precisely as expensive medicinal stuffs do. Sufferers from rheumatism will benefit by taking this black currant conserve freely.

The white currant is an off-shoot of the red only. Both make pretty fruit decorations for the table, being pretty to look at and good to eat afterwards. Home-made wine made from both red and black currants is delicious. It is medicinal and far more wholesome than purchased wines.

At this season, mothers will do well to make some boiled puddings of black or red currants. They are not only dainty and palatable but good medicine.

Red Currant Jelly.—For every 2 lbs. of red currants take 1 lb. white ones all just ripe and very juicy, and very carefully stripped from their stalks. Over ripe currants have lost much of their pectin or jelly principle. Place the currants in a granite kettle, and keep them well stirred over the fire, to make them render their juice freely. As soon as they have done so, pour it off, weigh it, and for each quart of juice take 1½ lbs of lump sugar, broken into fairly large pieces; dip these in cold water, and throw them well drenched, into a pan and boil them to a thick syrup, stirring it all well together until it drops from the skimmer in thick strings. Now pour in the juice at once, stir it all well together, and when well blended, let it all boil together quickly for 10 minutes; then skim carefully, and pour it into glasses which have been previously scalded and dried. When set, seal with melted paraffin, and put on the jelly glass covers.

Black Currant Vinegar.—Put in your kettle 1 quart of good ripe black currants, add 1 pint of the young currant leaves, and stir over the fire with a new wooden spoon till the currants begin to boil, then pour it all into a jelly bag, and strain, squeezing out every drop of juice you can. Return this juice to the pan with 1½ lbs. of lump sugar to each quart of juice, stir it well until the sugar melts, then skim very carefully, putting the skimmings on a sieve, and returning the juice that strains thru to the preserving kettle. Let this stand till cold, then for each quart of this syrup allow 1½ pints of the best white wine vinegar, adding, if it is to keep, from ½ pint to 1 pint of brandy to each gallon of vinegar.

Red Currant Jelly Sauce.—Two tablespoonfuls butter, 2 tablespoonfuls flour, ¼ cupful red currant jelly, 1 teaspoonful lemon juice, a few drops of onion juice, 1 cupful milk, a few grains of pepper, and ¼ teaspoonful salt. Blend together the butter and the flour; when smooth, add the milk and stir till boiling, then add the red currant jelly, lemon juice, onion juice, pepper, and salt. Boil 8 minutes, stirring all the time, strain and serve with meat.

Currant Punch.—Five cupfuls of currant juice, 4 cupfuls sugar, 12 cupfuls water, 2 cupfuls tea, 6 lemons, 6 oranges, and a large piece of ice. Boil the sugar and water for 10 minutes; add the currant juice, tea, sliced oranges and lemons, and the ice.

Mrs. Caustic—"Yesterday Annie asked me if I believed any girl ever died for love, and I said, 'Yes, lots. They marry and then work themselves to death for their husbands.'"

Anty Drudge—"Well, they needn't. And I don't believe any woman does, any more, since Fels Naptha Soap was made. It does the work and leaves women time for rest and pleasure."

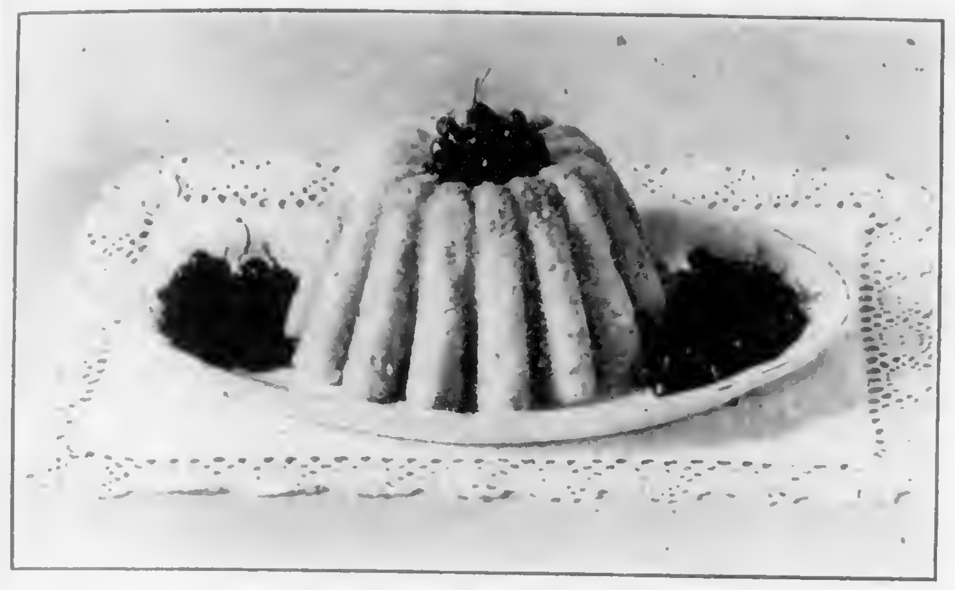
Don't make yourself sick doing work the hard way when there's a better way to do the same work and it's easy.

Fels-Naptha Soap in cool or lukewarm water does the *hard* part of your work *for* you. Clothes are sweeter, cleaner and whiter in less than half the time, and don't have to be hard-rubbed nor boiled. And for washing dishes and all kinds of cleaning, it has no equal.

Fels-Naptha saves your strength. Buy it by the carton or box and follow the easy directions on the Red and Green Wrapper.

Fels & Co., Philadelphia

FELS-NAPTHA



RED GRITS PUDDING WITH CURRANTS.

[illegible] Currants.—Wash, stem and cover 5 lbs. currants with 5 lbs. sugar; let stand in a basin over night, then [illegible] agate kettle and cook very slowly until the boiling point is reached. Skim, fill sterilized jars full, and seal.

Spiced Currants.—Five pounds of currants, 1 cupful vinegar, 1 level teaspoonful salt, 2 lbs. lump sugar, 2 tablespoonfuls ground cloves, 2 tablespoonfuls ground cinnamon, and 1 tablespoonful allspice. Remove the stems and wash currants, add remaining ingredients, and boil for half an hour. Keep in earthenware jar.

Red Grits Pudding.—One pound of red currants, 2 cupfuls water, grated rind and strained juice of ½ lemon, ½ cupful ground rice or sago, and ½ cupful sugar. Boil the red currants with the water until they are quite soft; [illegible]. Return the liquid to the saucepan, add the sugar, lemon juice and grated rind; allow to boil, then sprinkle in the ground rice or sago, and boil [illegible] minutes, stirring all the time. Pour into a wet mold, and turn out when cold. Serve with cream, and garnish with fine stems of currants, as illustrated.

Red and White Currant and Raspberry Salad.—Pick 1 lb. of white currants and [illegible] lb. of red currants off their stalks. Place the red currants in the center of the dish on which the salad is to be served; then arrange around them in alternate bunches the white currants and raspberries. Sweeten and freeze. Serve whipped cream and send to table separately.

Currant Compote.—Fresh currants, ½ lb. lump sugar, and ½ cupful of water. Dissolve the sugar in the water, boil until well reduced, skimming meanwhile. Put in the currants and simmer until tender but not broken. The compote may be served separately, or as an accompaniment to custards.

Currant Mold.—Put 2 heaping tablespoonfuls of gelatin into a clean saucepan, add the grated rind and strained juice of 1 lemon, ½ cup boiling water, and 1½ cups sugar, then dissolve. When beginning to set, add 1 cup of currants. Pour into a wet mold. Turn out when firm. Serve with cream or milk.

Currant Pie.—Line a buttered pie tin with good pastry. Mix 1 cup of sugar with ¼ cup of cornstarch, add the yolks of 3 eggs beaten with 1 tablespoonful water. Wash 1½ cups of white, red or black currants, drain, remove stems; add to first mixture and turn into the prepared crust. Bake in moderate oven until firm. Cool and cover with meringue made from the whites of the eggs. Set in a slow oven until delicately browned.

Currant Souffle.—Thickly butter a plain round mold, tie a band of buttered paper round the outside, wide enough to come two inches above it. Blend together 2 tablespoonfuls butter with 4 tablespoonfuls flour in a saucepan over the fire; add 1 cup milk, stir until boiling, and cook 5 minutes, stirring all the time, then add 1 cup stemmed currants, 3 tablespoonfuls sugar, the yolks of 3 eggs, one by one, and the stiffly beaten whites of 4 eggs. Pour mixture into the prepared mold and steam gently for one hour. Turn it carefully onto a hot dish, and pour sweet sauce around it.

Currant Tarts.—Line some gem pans thinly with pastry. Fill them with raw rice to preserve their shape during baking; bake quickly until they are a delicate brown, then turn out all the rice (This rice should be saved to use again for a similar purpose.) Wash and stalk 3 cups of red or black currants. Boil 1 cup lump sugar and ½ cup water 5 minutes, put in the currants, and simmer 10 minutes. Strain off the syrup, and put it back into the pan, add 1 tablespoonful butter, and boil until thick. Pour it into 1 teaspoonful cornstarch mixed smooth with a little cold water. Reboil the syrup for 5 minutes, stirring all the time. Fill the pastry cases with the currants, filling up with syrup. If desired cold, do not add the syrup until it is nearly cold.

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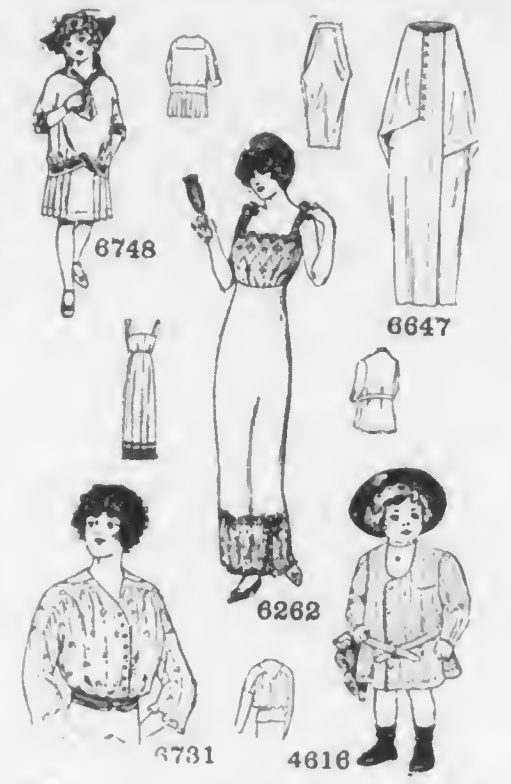
6748.—Girls' Dress.—Cut in sizes 6 to 14 years. Age 8 years requires 2⅜ yards of 36-inch material and ¾ yard of 27-inch contrasting goods. Price of pattern 10 cents.

6647.—Ladies' One-Piece Skirt.—Cut in sizes 22 to 32 inches, waist measure. Size 22 requires 2¼ yards of 36-inch material. Price, 10 cents.

6262.—Ladies' Semi-Princesse Slip.—Cut in sizes 34 to 42 inches, bust measure. Size 36 requires 3⅜ yards of 27-inch material, 3¼ yards of edging and 3½ yards of insertion. Price, 10 cents.

6731.—Ladies' Waist.—Cut in sizes 34 to 44 inches, bust measure. Size 36 requires 2¼ yards of 36 inch material. Price, 10 cents.

4616.—Boys' Russian Dress.—Cut in

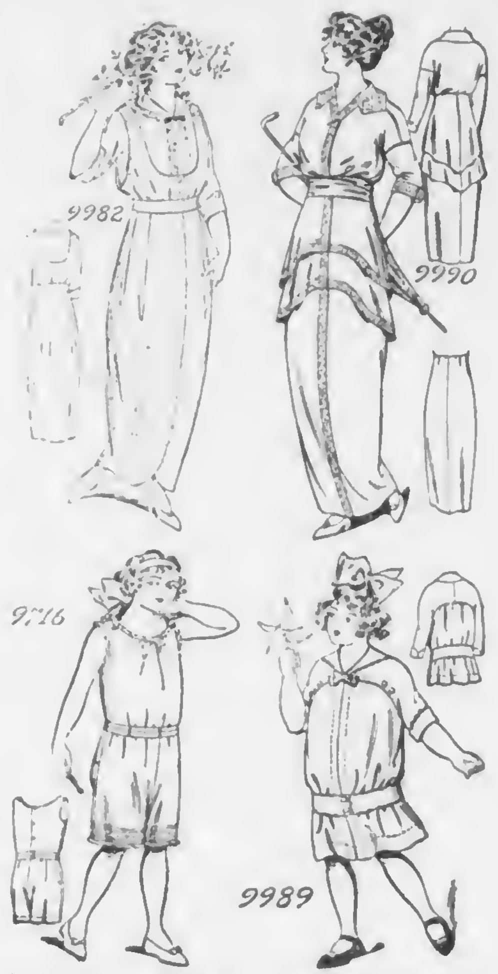


sizes 1, 2 and 3 years. Size 3 requires 1⅞ yards of 44-inch material. Price, 10 cents.

9982.—Dress with Over Blouse for Misses and Small Women.—Cut in 4 sizes: 14, 16, 17 and 18 years. It requires 5½ yards of 27-inch material with 2¼ yards for the underwaist, for a 16 year size. The skirt measures about 1¾ yards at the lower edge. Price of pattern, 10 cents.

9990.—Ladies' Dress with or without Flounce or Tunic.—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches, bust measure. It requires 6⅞ yards of 44-inch material for the dress in a 36-inch size. If tunic and flounce are omitted it will require 4⅞ yards. The skirt measures about 1⅞ yards at the foot. Price, 10 cents.

9716.—Girls' Under Waist and Drawers.—Cut in 5 sizes: 4, 6, 8, 10 and 12 years. It requires ⅞ yard of 36-inch material for the waist and 1 yard for



the drawers for a 6-year size. Price, 10 cents.

9989.—Girls' Dress.—Cut in 4 sizes: 4, 6, 8 and 10 years. It requires 2⅜ yards of 44-inch material for a 6-year size. Price, 10 cents.

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MR. PRATT

By JOSEPH C. LINCOLN

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SYNOPSIS OF PPREVIOUS CHAPTERS

Two New York business men, Van Brunt and Hartley, come to Wellmouth for a vacation. Solomon Pratt, skipper and village character, finds the "twins," as they are dubbed, interesting. After a period, during which Pratt has some experiences with the "twins" including helping to rescue a fresh air youngster, in whose protectress Hartley finds an old sweetheart; and a hair-raising voyage from Eastwich to Wellmouth, accident brings the twins to Horsefoot Bar Island, which they rent at a "bargain" from Nate Scudder and to which they move. Scudder has just brought over some "presents" for the "twins."

CHAPTER VII (Concluded)

He'd got the newspapers and strings off by this time and he spread the presents out on the floor. There was a wax wreath, from old Mrs. Berry's funeral, in a round case; and a crayon enlargement of a daguerreotype of Marcellus when he was thirty or so; he had a fancy vest on and a choker and a fringed-end necktie, and looked like he was freezing to death fast and knew it. Likewise there was a shell work basket in a shell frame with about a third of the shells missing; and two silver coffin plates on black velvet; and a worsted motto thing with "What is Home Without a Mother" on it.

"There!" says Nate, happy and generous. "We'll give 'em them things, Huldy and me. Leastways they can have 'em to look at while they're here. Have 'em strung around on the setting-room walls and it kind of takes off the bare look. Gives 'em something to think about too, don't it?"

"Yes," says I; "I should think 't would. I wouldn't think of much else, seems to me."

"Yes," says he. "Well, I hoped they could have 'em tonight afore they went to bed. But you explain about 'em in the morning. Tell 'em they're from me and Huldy. I'll be around after breakfast to fetch some more things from the store and see if there ain't something else I can do. Good night."

"Good night," says I, absent minded. I couldn't get my mind off them coffin plates.

He kind of hesitated.

"Oh say," he says. "Did you eat all of them mackerel you had? If you didn't, and they're likely to spoil, why, I'll take a couple along home with me. Huldy's dreadful fond of mackerel."

"There ain't but one left," says I, "and——"

"Oh well," says he; "one'll be enough for us. We're awful small eaters."

So I trotted out the mackerel and he done it up in a newspaper and went away to his dory. I lugged in the presents and laid 'em away in the old chest of drawers in the dining room. Felt like an undertaker, too, I did, all the time I was doing it. I didn't want the Heavenlies to see them relics till they'd ate a good breakfast—they was too much for an empty stomach. Then I locked up and took the lamp and went to my room.

After I got undressed I opened the window and leaned on the sill and thought. I thought about my new job and what I could see was coming to me in the way of work, and about Lord James and Nate and all. And then I thought of Hartley and that Page girl. Martin didn't act to me like a money-grabber. I couldn't understand it. One thing I was sure of, them two was meant for each other and it seemed to me that they still liked each other. But there was Van Brunt—I liked him too.

Just then a thundering big greenhead bit me on the back of the neck and I slammed down the sash and turned in on my bale of corncobs. Tired! don't talk!

CHAPTER VIII

Mr. Scudder's Presents

I was up the next morning about five and pitched in making biscuit and lugging water and so on. Lord James comes poking down after a while. He looked pretty well used up.

"See 'ere, Pratt," says he. "W'at they got in them blooming beds—bricks?"

"Why?" says I. "Was yours hard?"

"'Ard? Upon me word I'm all full of 'oles, like a grater. My back is that sore you wouldn't believe it. And w'at makes 'em so noisy?"

"That's the husks," says I. "They do rustle when a feller ain't used to 'em."

"Rustle! When I'd go to roll over, upon me word the sounds was 'orrifying. Like the water washing around that boat of yours, it was. I dreamed about being adrift in that awful boat all night. About that and ghosts."

"Ghosts, hey? Did you dream of ghosts?"

"That I did. I could 'ear 'em groaning."

"'Twas yourself that was groaning," says I. "A feller that took aboard the cargo of supper that you did hadn't ought to sleep on cornhusks."

"I didn't sleep; not a 'ealthy Christian sleep, I didn't. I say, Pratt, did you ever 'ear that this old 'ouse was 'aunted?"

"Well," says I, "I don't know as I ever heard that exactly. But old Mrs. Berry died in it and then Marcellus lived here alone till he died. Seems to me he died in that room of yours, come to think of it," says I, cheering him up.

He turned pale, instead of the yellow he'd been lately.

"'Oly Moses!" says he. "You can't mean it."

"I can mean more than that without half trying," I says. "Yes, I remember now. He did die there and they say he died hard. Maybe that was on account of the bed tho."

He was mighty upset. Commenced to tell about a friend of his over in "the old country" who had been butler at a place that was haunted. I asked if his friend had ever seen any of the spooks.

"No," says he, "'e never saw 'em 'imself, but it was a tradition in the family. Everybody knew it. It was a white lady, and she used to trip about the 'ouse and over the lawns nights," he says.

"White, was she?" says I. "Well, I suppose if she'd been black they wouldn't have been able to see her in the night. Never heard of a colored ghost anyway, did you?"

"I mean she was all dressed in white," he says, scornful. "And they say 'twas 'orrid to see her a-gliding around the grass."

"Want to know!" says I. "Well, if you see old Marcellus gliding around the hummocks out-side, call me, will you? I'd like to see how he manages to navigate thru the sand. That's a job for a strong, healthy man, let alone a dead one."

I guess he see I didn't take much stock in his ghost yarns, so he quit and went to getting the things on the breakfast table. But he was nervous and broke a dish and sprinkled forks and spoons over the floor like he was sowing 'm. Pretty soon he had to stop and hustle upstairs, for the Twins was shouting for their duds. For grown men they was the most helpless critters; His Lordship was a sort of nurse to 'em, as you might say.

After a while he had 'em dressed and ready and they come down to breakfast. Nate had brought over feather beds for them, so they had slept pretty well. Van Brunt was rigged up special because he was going to Eastwich that forenoon to see his girl.

I'd cooked a whopping big breakfast but 'twas only just enough. Van was a regular famine breeder and Hartley wa'n't far astern of him. The Natural Life was agreeing with both of 'em fine so far. Martin's cheeks was filling out and him and his chum was sun-burned to brick red.

After breakfast they went out for their usual promenade. By and by I heard 'em hailing me from the back of the house. When I reached 'em they was standing by the barn, with their hands in their pockets, and looking as if they'd discovered America.

"Come here, skipper," says Van. "Do you see this?"

He was pointing at a kind of flat place in the lee of the pig sties. 'Twas a sort of small desert, as you might say: a bunch or two of beachgrass in the middle of it and the rest poverty grass and sand.

"I don't see much," says I. "What do you mean?"

"I mean the location," says he. "Here's where we'll have our garden."

I looked to see if he was joking. But it appeared he wa'n't.

"Garden?" says I.

"Sure," he says. "It's an ideal spot. Sun all day long."

"You could make a garden here, couldn't you, Sol?" asks Hartley.

"Maybe I could," says I, "if I dug thru to Chiny and hit loam on t'other side. Otherwise you couldn't raise nothing in this sand but blisters."

"Scudder could bring us loam," says Van. "We've thought of that."

"Starting a garden in July!" says I. "What do you cal'late to raise—Christmas trees?"

"Late vegetables, of course," says Van. "Martin and I intend to stay all thru September. Think of it, Martin; green corn from our own plantation. And cucumbers in the morning, with the dew on 'em."

"And tomatters already baked in the sun," I says, disgusted. "You take my advice and buy your green stuff off Scudder."

But they wouldn't hear of it. Called me a Jeremiah and so on.

"All right," says I, finally. "Have it your own way. But who's going to work this cucumber and dew farm?"

"Why, we are, of course," says Van. "That's part of the game, isn't it, Martin? Nothing so healthful as outdoor work for caged birds like us. Maybe we'll have two gardens, one apiece. Then we'll see who raises the first crop."

I could see 'em doing it! But there was no use arguing then. I put my trust in Scudder's not being able to fetch the loam.

Pretty soon Nate heaves in sight in the dory with a cargo of skim milk and store eggs and butter. Van Brunt and I went down to meet him. Van didn't give him a chance to talk; just as soon as the stuff was put on shore he announces that Scudder must go right back and drive him over to Eastwich. Nate backed and filled, as usual, telling how busy he was, and how he hadn't ought to leave, and so on. But Van corks him right up with a five-dollar bill and off they went.

I lugged the milk and butter and the rest of the truck up to the house and started in on another stretch of work. I'd had a vacation of ten minutes or so; now 'twas time to begin again. After I'd cleared up round the kitchen and the like of that, I went off down to the Dora Bassett and tackled her. Van Brunt had cut away about everything but the mast, and I had to rig new halliards and sheets and downhauls and land knows what. Drat that Heavenly! 'twas a two days' job.

While I was making a start on it Hartley comes loafing down from the house.

"Skipper," he says, "let's have another one of your chowders for lunch, will you? They're the real thing."

"Well, I tell you, Mr. Hartley," says I, "if we have chowder I'd ought to go and dig the clams right now, on account of the tide. And, honest, I hate to leave this work I'm on. Still, of course, if you say so, why—"

"What's the matter with my digging 'em?" he says.

I grinned. "Why, nothing," I says, "so far as I know, except that it's something of a job."

"Job!" he says. "It'll be fun. Tell me where to go—and what to dig 'em with, and—and how to do it."

I told him to take the skiff and a clam hoe and a couple of buckets and row across to the mainland. There was clams all alongshore there, I knew.

"You go along till you see a lot of little holes in the sand," I says, "then you dig. Want to look out that they ain't sand-worm holes, nor razor fish. And when you begin to dig," I says, "you want to lay right into it, 'cause the clams are likely to be [illegible] and they get under fast. So—"

"Hold on a minute," says he. "How am I going to tell a worm-hole from a clam hole, or a clam-hole from a—what was it?—barber fish hole?"

"Razor fish," says I. "Not barber. Well, I don't know how to tell you, exactly. If it's a sand-worm there's likely to be a little tiny hole alongside the regular one; that is, there is sometimes and sometimes there ain't. And if it's razor fish—well, I can't tell 'em, but I cal'late you'll have to use your own judgment."

He said all right, he guessed he'd get along. So off he went, and pretty soon him and Lord James comes down and gets aboard the skiff. His Lordship was loaded with no less than four buckets, besides a clam hoe and the garden hoe and the stove shovel. 'Twas the most imposing clam hunt outfit ever I see. If I'd been a clam and see that battery coming my way I'd have took to tall timber.

"Sure you've got hoes and buckets enough?" I asks, sarcastic.

"I guess so," says he, looking around at the weapons. "We might need another pail perhaps, but if we do I'll send James after it."

His Lordship started rowing, taking strokes with one hand and then with the other, and the fleet got under way and waltzed, as you might say, zigzag across to the main. 'Twas as calm as a millpond and they hit land up towards the point by the Neck Road. Then the clam slaughterers got out and disappeared round behind the point. I went on with my rigging.

(To be continued.)

Markets

PHILADELPHIA PRODUCE

Philadelphia, Pa., June 22, 1914.

There was little trading in butter and the market was unchanged. Strictly fine [illegible] sold fairly and were well cleaned up at full figures. Poultry offerings were only moderate and the market ruled steady with trade quiet. Fruits and vegetables fluctuating.

Butter.—Western creamery, 29½c extras, 27½c, firsts to seconds, 22@26½c; special prints 35@37c; near-by prints 31c.

Eggs.—Candled 25c per dozen; extras, 25c. Current receipts at $6.15 per standard case.

Poultry.—Fowls, 16½@17½c; old roosters 11@12c; chickens 30@32c; pigeons, [illegible] 18@22c.

Dressed Poultry.—Western fowls, 10@18c; roosters, 12c; squabs, $2.00@4.50 per doz.

Vegetables.—White potatoes, Pa., new $3.75@4.50 bbl.; onions, Jersey, new, $1.50 [illegible]; peppers, $1.25@2 crate; eggplant [illegible] 2.50 per crate; lettuce, 50c@$1 [illegible]; beets 2@3c per bunch; sweet potatoes [illegible] 50c bas.; string beans, 75@85c [illegible]; squash Jersey 90c basket; cucumbers [illegible]c@$1 bas; cabbage 75c@$1.25 per crate; asparagus 12@18c bunch; radishes [illegible] bch; carrots 2@3c per bch; mushrooms 20@25c per lb.; peas 40@60c per basket; spinach $1.00@1.50 per bbl.

Fruits.—Apples $2.50@5.00 per bbl. Pineapples, crate $2.50@3.50; lemons $5@6 per box; grapefruit $2.00@4.00 per box; oranges $2.00@5.00 per box; strawberries, 12@15c per quart; blackberries, 10@12c quart; huckleberries, 10@15c; cherries, sour, [illegible] per pound.

Hay and Grain.—No. 1 hay, large bales, $18@18.50. No. 1 medium $17.50@18; no grade, $10.00@12.00. Clover mixed hay, [illegible] mixed at $16.50@17.00; straw No. 1 straight rye $15.50. No. 2 do., $14.50@[illegible]. No. 1 tangled rye straw new $13.00 [illegible]. No. 2 do. $12.00@12.50. No. 1 [illegible] straw $10.00. No. 1 oat straw $[illegible]@11.50; corn No. 2 yellow, 80½ [illegible]; wheat No. 2 red 97@97½c; No. 1 Northern $1.01@1.02. No. 2 white [illegible] 47@47½c. No. 3 white 45½@46c; standard white 46½@47c.

Feed.—Winter bran, in 100-pound sacks [illegible] $26.00@26.50; spring bran, in [illegible] sacks per ton $24.50@25.00.

Coffee.—Rio 7s 9¼c. Santos 4s 12¼@[illegible]. Mild Coffee—Cordova 12½@16c.

Sugar.—Cut loaf $5.25 cwt; cubes, $4.55; powdered, $4.40; granulated, $4.30; standard granulated, $4.35; Crystal A, $4.30.

Provisions.—City beef, in sets, smoked and air dried 31@31½c. Hams cured, 13¾@14¾c; skinned 13¾@14¾c; smoked 16@18c. Other hams, smoked, city cured, as to brand 16@18c. Picnic shoulders, 11¼@11¾c; do smoked, 13@13½c. Bellies in pickle 11½@15½c. Breakfast bacon, as to quality 19@23c. Lard, refined, 10⅝@11½c tes. do in tubs, 10¾@11⅝c; do kettle rendered 10½@11½c. Tallow prime city [illegible] do dark, 5c; do cakes, 6c.

Philadelphia Retail

Vegetables.—Onions 15c per qt. Peppers [illegible] doz. eggplants 10@25c apiece; cabbage [illegible] lettuce, 5@10c head; beets [illegible] per bunch; sweet potatoes, 18c [illegible] potatoes new $1 bas; string [illegible] tomatoes 50c carrier; [illegible] for 25c; cauliflower, 15@20c [illegible] mushrooms, 75c pound; asparagus [illegible] cucumbers, 5@6 for 25c; [illegible] for 25c; radishes 5c per [illegible] per bunch; peas, 30c per [illegible]

[illegible] 25c per ¼ pk; pineapples, [illegible] grapefruit 3 for 25c; oranges, [illegible] dozen; lemons, 20@25c [illegible] strawberries, 18@20c per [illegible] 16@18c box; cherries, [illegible] huckleberries, 15@18c per pound; apricots 75c per carrier.

BALTIMORE PRODUCE

Baltimore, Md., June 22, 1914.

[illegible] wholesale market butter [illegible] were quiet.

Butter.—Creamery fancy 29@29½c; do [illegible] prints, 29@31c; blocks, [illegible] Maryland and Penna. rolls, 19c [illegible] 21@24c.

Eggs.—Nearby firsts 20c; western, 20c [illegible]

Live Poultry.—Hens 17c; spring chickens [illegible] roosters, 10c; ducks 11@18c.

Vegetables.—Potatoes 85c@$1.00 per bu: [illegible] per bbl; beets 2@2½c per [illegible] green, $1.00 per basket; cucumbers, 75c@$1.25 per basket; lettuce, [illegible] box; tomatoes, $2.50@3.00 [illegible] onions, 90c@$1.00 per 100 bunches [illegible] $2.50@3 per crate; cabbage, 85c@ [illegible] radishes 50c@$1 per 100 bchs; [illegible] 1@2c per bch; spinach, 70@75c [illegible] 75c@$1.00 per bu.; squash [illegible] basket.

Fruit.—Apples $2.00@4.50 bbl. Grapefruit $1.50@2.50 per box. Oranges $1.50@ [illegible] strawberries 8@16c per qt. [illegible] per quart; huckleberries 10 [illegible] quart; blackberries 10@11c qt. [illegible] $1.00@1.25 per crate; raspberries [illegible] 11@12c per quart; black, 12@13c.

Grain.—Wheat No. 2 red western 91c; [illegible] corn yellow, 79½@80c; [illegible] white, 45¾c; No. 3 white [illegible] rye 60@75c.

Hay and Straw.—Timothy No. 1 $18.50@19; [illegible] timothy $17.00@17.50; do No. 3 [illegible] No. 1 clover $14.50@15.00; [illegible] $13@14. No. 1 oat straw $10.00 [illegible] straw, $8.50@9.00; No. 1 [illegible] straw $11.50@12.00.

Mill Feed.—Spring bran $26@26.50. Middlings [illegible] to white $29@31; western middlings [illegible]@28.00; city mills middlings [illegible]

NEW YORK PRODUCE

New York City, June 22, 1914.

[illegible] market showed an unsettled [illegible] little change in prices. There [illegible] in the generally unsatisfactory [illegible] of the egg market, due to the [illegible] defective quality of supply. The [illegible] indicates lighter supply and a [illegible]

Eggs.—Fresh gathered firsts to extras [illegible] seconds to thirds, 11@19½c; no grade 10@16c; mixed 19½@23c.

Butter.—Creamery firsts to extras 25@27½c; thirds to seconds 22@24½c; state dairy 20@26c; packing stock 15½@18½c.

Cheese.—Whole milk specials 14¾@15c; do., common to fancy, 11¾@14½c; skims 4@12¾c.

Dressed Poultry.—Turkeys, dry 20@25c lb; broilers, 15@20c lb; fowls, 12@19c; old roosters 12@12½c; ducks, 8@15c.

Live Poultry.—Prices unsettled.

Vegetables.—Cabbage, 75c@$1.25 bbl.; green beans, $1@2.25 bas; carrots, $2@2.50 100 bchs; cucumbers 75c@1.25 bas.; lettuce, 15@75c bas; squash $1.50@2 bbl. crt; celery 50@75c doz bchs; onions $3@3.75 per basket; tomatoes, $1.75@2.50 per carrier; peppers $1.00@1.75 box; beets, $1.00@2.50 per 100 bchs; potatoes, $1.00@4.50 bbl; sweet potatoes, 75c@$1.15 bas; eggplants, $1@1.75 bx; asparagus 60c@$2.25 per doz. bunches; radishes, 50@75c per 100 bunches; rhubarb, 50c@$1.00 per 100 bunches; peas 25c@$1.25 bas.

Fruit.—Apples, $1.50@5 bbl; grapefruit 75c@$3.50 per box; oranges, 75c@$4.00 per box; strawberries 6@16c per quart; huckleberries, 7@14c per quart; blackberries, 8@14c per quart; cherries, 6@15c per quart; gooseberries, 5@11c per quart; raspberries, red, 7@11c per quart; currants, 12@14c per quart; peaches, $1.50@2.50 per carrier; cantaloupes, 85c@$2.25 per standard crate.

Grain.—Wheat No. 2 red 95½@96c; No. 1 Northern, $1@1.01; corn, No. 2 yellow 80@80½c; oats, standard white, 46½@47c.

WASHINGTON PRODUCE

Washington, D. C., June 22, 1914.

Eggs.—Per dozen, 20@21c.

Live Poultry.—Hens, per pound, 18c; roosters, 10@11c; spring chickens 28@32c.

Vegetables.—Potatoes, new $3.50@4.50 bbl; onions $2.75@3.25 crt; lettuce per bas; $1@1.75; peppers, $1.00@2.00 per crate; eggplant, $2@3 crate; beets, new, 2@3½c per bunch; carrots 1@2c per bunch; cabbage 50c@$1 per crt; cucumbers $1@1.50 bas; sweet potatoes $1.50@2.50 per bbl; celery, doz., 25c@1.25; tomatoes $1@2.50 crate; asparagus $1@2.50 per doz., bchs; peas, $3.50@6 per bbl; lima beans $2.50@3 per crt; radishes, $1.00@3.00 per 100; rhubarb 1½@2c per bunch.

Fruit.—Apples, $3.00@5.00 per bbl; pineapples, $2.75@3.25 per crate; grapefruit, $3.00@4.00 per crate; lemons, $4.50@5.50 per box; oranges, $3.00@4.00 per box; strawberries 5@10c per quart; blackberries, 9@11c per quart; huckleberries, 8@10c per quart; watermelons, 40@50c apiece.

WILMINGTON PRODUCE

Wilmington, Del., June 22, 1914.

Butter.—Print butter, 35@40c lb. Creamery roll, 40c.

Poultry.—Chickens, dressed, 18@20c; broilers, 25c.

Eggs.—Fresh, 23@24c; storage, 20c.

Vegetables.—Potatoes 10@12c ¼-pk; new 20c ¼-pk; cabbage, 5@15c; sweet potatoes 10@15c ¼-pk; onions 20@25c ¼-pk; new 20c qt. Eggplants 10@15c ea. Peppers 20@40c doz. Parsley, 1@5c bch. Lettuce, 8@10c bunch. Beets new 12c bunch; string beans, 20c ¼-pk; peas, 25c ¼-pk; spinach 10c ¼ pk; asparagus, 35@40c bunch; tomatoes, 15@20c qt; squash, 10c each; kale, 8c ¼ pk; parsnips, 5c bunch; cucumbers, 10@12c each; turnips, 5c ¼ pk; radishes, 5c bunch.

Fruit.—Apples, 15@25c ¼ pk. Pineapples 20@25c apiece. Oranges, California 20@30c doz. Florida, 35@40c doz. Bananas, 10@15c doz. Grapefruit, 7@10c each; strawberries 40@50c box; lemons 12@15c doz.

YORK PRODUCE MARKET

York, Pa., June 22, 1914.

The markets ruled steady the entire week. Under a large supply pea prices dropped the fore part of the week. Berries recovered owing to the weather conditions. County potatoes and cabbages were displayed on a few stalls.

Eggs.—19@21c doz.

Butter.—Country, 25@30c; separator, 30@35c. Milk, 5@6c per quart.

Poultry.—Hens, 14@16c; springers 18c per pound; dressed, 40@85c each.

Vegetables.—Potatoes 10@16c ½-pk; 75c@$1.00 bu; cabbage 5@8c each; lettuce, 3@6c; beets, 3@5c bch; radishes 3@5c bch; onions 3@4c bunch, 15c ½-pk; lima beans, 15c per quart; sweet potatoes, 15c ½ pk; lard 14@16c lb.; celery 5@10c ea; peppers, 10@12c doz; turnips 10c per ½ pk; sauer kraut 8c qt; apple butter, 20@25c qt.; asparagus, 1@8c bunch; rhubarb, 3@5c per bunch; peas, 10@18c per ½-pk.

Fruit.—Apples, 25@35c ½-pk; strawberries, county 4@10c per box; cherries, 3@8c per box; huckleberries, 12@15c per box.

Retail Grain Market.—Wheat, $1.07 bu; corn, 88c; oats, 56c; rye, 77c; bran, $1.60 cwt., middlings, $1.65 cwt.

Wholesale Grain Market.—Wheat, 97c; corn, 78c; oats, 45c; rye, 67c.

PHILADELPHIA LIVE STOCK

Philadelphia, Pa., June 22, 1914.

Beef Cattle.—The market was reasonably steady all along the line with a moderately fair trade. Pennsylvania cattle were principally in evidence. Cows, as well as calves, commanded former rates under conservative inquiry.

	Beef Cattle	Sheep and Lambs	Hogs
Total for week	2,987	8,656	5,750
Previous week	2,981	10,669	6,269

Best steers	$8.87@9.00
Choice steers	8.65@8.75
Good do	8.45@8.55
Medium steers	8.00@8.25
Common steers	7.75@7.87
Bulls	6.00@7.50
Fat cows	5.00@6.75
Thin cows	2.75@4.50
Milk cows	45.00@80.00

Veal calves steady.

Best calves	$11.00@11.50
Good to choice do	10.00@11.00
Medium	8.00@9.00
Common do	6.00@7.00

Sheep and Lambs.—Offerings of the better class were well absorbed at unchanged prices and current arrivals were not so liberal. Winter lambs are about exhausted.

Extra wethers	$6.25@6.50
Choice do	5.25@5.50
Common to [illegible]	4.00@5.00
Ewes fat	4.25@4.50
Extra lambs	8.25@8.50
Good to choice do	7.50@7.00
Common to medium	5.00@7.00
Early spring lambs	9.50@9.75

Hogs.—Conditions were fairly steady and demand was seasonable. Western, $11.50@11.75.

City Dressed Stock.—Every variety of choice and prime meat was held in a steady to firm manner, inquiry being about normal. Steers 12@14c; heifers, 10½@13c; cows, 9@12c. Veal calves, 13@14c; country dressed calves 13@14c; extra do., 14½c. Sheep, 11@12c; extra wethers, 13c. Spring lambs 18c. Hogs, 11¾@12c.

PITTSBURGH LIVE STOCK

Pittsburgh, Pa., June 22, 1914.

Cattle.—While the supply was only 60 loads compared with 110 the Monday before, the market ruled slow and generally 10 to 15 cents lower. Very few desirable cattle were on sale, the bulk running to the common and grassy grades. Fat cows were in liberal supply and sold lower. Quite a number of bulls were on sale and they sold generally 25c lower. Fresh cows were in liberal supply and barely steady on best, while medium and springer grades were lower. Today's supply was 65 loads. The market ruled active and higher on all grades.

Good to choice	$8.85@9.10
Good 1,300-1,400 lb	8.60@8.85
Medium to good 1,200-1,300 lb	8.10@8.60
Tidy 1,050-1,150 lb	8.20@8.50
Fair to medium, 900-1,100 lb	7.50@8.10
Rough half fat, 1,000-1,300 lb	5.00@7.00
Common, 700 to 900 lbs	5.75@7.00
Common to good fat oxen	4.50@7.00
Common to good fat bulls	5.50@7.75
Common to good fat cows	4.42@7.00
Heifers	5.50@8.00
Bologna cows	3.50@4.25
Fresh cows and springers	25.00@85.00

Calves.—Veal calves were in fair supply and the market closed 50 cents above Monday's prices. Today's receipts were 900 head. Market was active and steady.

Heavy and thin calves	$6.00@7.50
Veal calves	8.00@10.50

Hogs.—The supply for the past week has been the largest that has been on sale for some time and with a good demand, the market ruled stronger each day after Monday and the close for the week was 15 to 20 cents per cwt. above Monday's price. Today's receipts were 65 double-deck loads. The market was 5@10 cents higher than last week's closing prices on best weights.

Prime heavy	$8.55@
Heavy mixed	8.55@
Prime medium weights	8.60@
Best heavy Yorkers	8.60@
Light Yorkers	8.55@
Pigs	8.20@8.30
Common to good roughs	7.00@7.40
Stags	6.25@6.75

Sheep and Lambs.—Sheep and lambs were in liberal supply all week and with only a fair demand, sheep ruled lower. Lambs were only steady, while spring lambs were higher. Today's receipts were 25 double-deck loads. The market was stronger on choice sheep but other grades sold steady. Yearlings were slow at about steady prices. The supply of spring lambs was liberal and the market lower, top being $9.50 with bulk of sales at $9.35.

Prime wethers	$5.80@6.00
Good mixed	5.50@5.70
Fair mixed ewes and wethers	4.50@5.25
Culls to common	2.50@4.00
Culls to choice lambs	4.50@7.25
Spring lambs	6.50@9.50

BUFFALO LIVE STOCK

Buffalo, N. Y., June 22, 1914.

Cattle.—The demand was fair for choice butcher cattle thruout the week. The supply was light. The market after Monday was quiet and the close about steady at unchanged prices. With 4,000 head on sale this morning the market was strong and 10c higher on all grades.

Choice heavy steers	$9.00@9.30
Fair to good	8.25@8.35
Yearlings	7.75@8.65
Handy butchers	7.25@8.60
Good to choice fat cows	5.00@7.25
Good to choice heifers	7.00@8.25
Butcher bulls	6.25@7.25
Feeders	7.00@7.75
Stockers	6.00@7.75
Cows and springers	30.00@85.00

Calves.—There was no particular change in the market during the week, the basis on choice veals being $10.50@10.75. Arrivals today numbered 1,600 head.

Choice veals	$10.50@10.75
Lights and thin	6.00@8.75

Sheep and Lambs.—The trade opened fair for good lambs but was lower on spring lambs. Yearlings were in fair demand and lower. Sheep and wethers were in fair demand. On the close, the trade was good with an active demand for yearlings, and with wethers higher. Sheep and lambs were steady today with 3,000 head on sale.

Choice lambs	$9.50@10.00
Yearlings	7.50@8.50
Wethers	6.50@6.75
Ewes	4.25@5.50
Mixed sheep	5.75@6.00

Hogs.—Notwithstanding the heavy receipts Monday the trade was good but the basis lower on the opening. The trade after Monday was fair on desirable grades. On the close, the demand was good and the market firm on desirable grades. Yorkers sold at $8.55@8.60. Dairy and common hogs were slow. Hog arrivals today numbered 1,600 head.

Heavies	$8.55@8.60
Mixed and medium	8.55@8.60
Yorkers	8.55@8.60
Light Yorkers	8.55@8.60
Pigs	8.40@
Roughs	7.15@7.25
Stags	6.00@6.75

Horses.—Offerings today numbered 350. There was a fair demand for workers, while drivers were slow. Best teams, $700@750; medium $600@700. S.

BALTIMORE LIVESTOCK

Baltimore, Md., June 22, 1914.

Cattle.—Receipts for the week were 1,919 head against 1,575 last week.

Steers	$6.25@8.35
Heifers	5.50@7.50
Cows	3.00@6.25
Bulls	5.25@7.00
Fresh cows	32.50@70.00

Sheep and Lambs.—Receipts for the week were 9,322 head. Fair supply; market strong on good stock.

Sheep	$2.25@5.25
Spring lambs	7.50@9.40

Hogs.—Receipts for the week were 10,701 head against 9,908 last week.

Light Western	$8.85@8.95
Heavy to medium	8.85@8.90
Near-by	8.75@8.85
Pigs	8.00@8.70
Roughs	7.00@7.75

Calves.—Receipts for the week were 350 head against 406 head last week. Light supply, market lower at $6.50@11.00.

NEW YORK LIVE STOCK

New York City, June 22, 1914.

Beef Cattle.—Receipts today, 3,000 head. Market irregular.

Steers	$7.00@8.40
Bulls	5.35@7.75
Cows	3.75@7.00

Calf receipts 7,000 head. Market firm.

Choice	$8.50@11.25
Culls	6.50@8.00

Sheep and lamb receipts 15,000 head. Market steady.

Sheep	$3.50@5.37
Spring lambs	8.50@9.75

Hog receipts 7,000 head. Market steady.

Choice	$8.50@8.75
Roughs	7.25@7.50

PITTSBURGH HAY AND GRAIN MARKET

Pittsburgh, Pa., June 22, 1914.

Hay.—Heavy receipts of poor stock shipped into this market within the last week has had a depressing effect on all grades. Hay of poor quality is hard to dispose of, there being quite an accumulation on track, and can only be placed after concessions are granted. No. 1 and No. 2 timothy hay can be placed at quotations but the lower grades are hard to dispose of as are also clover and prairie hay.

No. 1 timothy	$17.00@17.25
No. 2 timothy	14.00@15.00
No. 1 light mixed	14.50@15.00
No. 1 clover mixed	13.00@13.50
No. 2 clover mixed	10.00@11.00
No. 1 clover	12.50@13.00
No. 2 clover	9.00@11.00

Straw.—Receipts continue liberal with only a slight demand; market dull and slow sale.

No. 1 Oats	$9.00@9.25
No. 2 Oats	8.50@8.75
No. 1 Wheat	8.75@9.00
No. 2 Wheat	8.25@8.50
No. 1 Rye	9.75@10.00
No. 2 Rye	8.75@9.25

Ear Corn.—Receipts of ear corn quite liberal while the demand is very limited; market lower.

No. 2 Yellow	75@76c.
No. 3 Yellow	71½@73c.
No. 1 High mixed	73½@75c.
No. 2 Mixed	71½@72½c.

Oats.—Receipts quite liberal while the demand is only fair; market dull and draggy.

No. 2 white	44¾@45c.
Standard oats	44@44½c.
No. 3 white	43@43½c.
No. 4 white	41½@42½c.

GRASS SEED MARKET

Toledo, O., June 22, 1914.

Cloverseed.—Prime cash, $8.20; October and December, $8.75.

Timothy.—Prime, cash, $2.62½; December, $2.70.

NEW YORK MILK MARKET

New York City, June 22, 1914.

The market suffered a slump last week owing to the comparatively cool weather. The dealers estimate that the surplus, which increased rapidly, is now about 20,000 cans a day. All of this is being manufactured. It is expected that the Borden rate will serve as a basis of payment for 70 percent of the June milk. Whether the producers in the 26 cent zone receive approximately 2½ cents or 2¾ cents depends upon whether or not the Borden company decides to pay a premium as it did for June of last year.

The receipts of milk and cream in 40-quart cans for the week ending June 20 were as follows:

Railroad	Milk	Cream
Erie	50,085	3,765
Susquehanna	7,750	305
West Shore	14,796	1,982
Lackawanna	68,250	3,875
N. Y. Central (long haul)	95,011	4,496
N. Y. Central (short haul)	15,175	50
Ontario	46,751	4,646
Lehigh Valley	18,560	2,854
Homer Ramsdell Line	3,050	68
New Haven	8,787	280
Pennsylvania	8,539	241
Other sources	1,785	34
Totals	354,539	22,596

ELGIN BUTTER QUOTATION

Elgin, Ill., June 22, 1914.

The quotation committee of the Elgin Board of Trade this afternoon declared butter firm at 27½c.

TOBACCO MARKET

Transplanting is well underway but in many localities this is of little use owing to the presence of millions of hungry cutworms. In one instance 65 worms were found devouring a row of 130 plants. Another grower lost one half of all the plants transplanted. Fortunately there is an abundance of plants to replace those thus lost, but this means much additional hand labor and precludes the possibility of first-class results. Growers should not overlook the practicability of Paris green as a destroyer of these pests. Mixed with some 20 times as much air-slaked lime and applied with some sort of sifter or blower results are at once favorable.

A very small part of the 1913 crop remains in growers' hands and this seems to be marketable at an even lower price than existed during past weeks. A slight improvement was noted in the cigar industry which raised hope all along the line. In the general market there was an increased demand for Pennsylvania and similar types but the transactions were of limited volume.

In New York crop conditions are favorable and tobacco plants are ready to transplant even before growers are prepared to do so. Connecticut has experienced a favorable season and the crop is going out under favorable conditions. A large product is predicted there. Transplanting is under way in Wisconsin, being abundant and even too forward to suit the convenience of growers. H. E. Tweed, June 22, 1914.

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Thoroughpin.—I have a yearling colt that has a soft, puffy swelling on each side of hock. What should I apply? T. B. H., Burgettstown, Pa.—Apply 1 part powdered cantharides and 6 parts lard every 10 days. Or apply equal parts tincture iodine and spirits of camphor, 2 or 3 times a week.

Mange.—The neck and shoulder of three of my steers are diseased and my neighbor tells me they have mange. I. W. R., Oil City, Pa.—Apply 1 part sulphur, ½ part carbonate of potash and 3 parts lard to mangy parts of body, twice a week.

Sore Ears.—Several of my hogs are troubled with sore ears and the home remedies that I have applied fail to heal the sores. I am not able to tell what caused this trouble, but am inclined to believe it caused by wallowing in water that is none too clein. B. T. I., Navarre, Pa.—First of all, if this chapping of the skin is caused by wet and filth, keep the hogs out of it and their ears will soon heal. Apply 1 part carbolic acid and 7 parts vaseline to sores daily.

Sweeny.—I have a 4-year-old colt that stepped on a stone which in some way affected his shoulder so that flesh has fallen away nearly the whole length of back part of shoulder blade. He was lame for a short time after accident and before sweeny set in. The hide is perfectly loose and the wasted parts will not measure more than four inches in width. This accident happened five weeks ago. E. T., Cameron, N. Y.—Clip hair off atrophied muscles and apply 1 part powdered cantharides and 6 parts fresh lard every 10 days and he will gradually get well.

Sprained Back.—I have a horse that has been working in woods hauling heavy logs and today chain broke, horse fell and since then has had poor use of hind quarters. G. W. D., Tillmore, N. Y.—Give him 1 dr. of ground nux vomica at a dose in feed, 3 times a day; also give him a dessert spoonful of powdered nitrate of potash, once a day. Also apply 1 part turpentine, 1 part aqua ammonia and 3 parts olive oil to back, once a day.

Fistula of Withers.—For more than a year our local veterinarian has been treating one of my horses for fistula of withers, but he has not succeeded very well. H. H. B., Califon, N. J.—You had better ask your veterinary to apply serum treatment and he will doubtless obtain good results. There are several commercial brands on the market that are reliable and which he no doubt knows of.

Out of Condition.—Have a colt that perspires very freely and has a rough coat, but his appetite is good and he seems healthy otherways. Can you suggest a remedy? M. E. T., Herman, Pa.—Groom your colt twice a day and give him a teaspoonful powdered sulphate iron, a tablespoonful ground gentian and a teaspoonful of powdered nitrate of potash in feed, 2 or 3 times a day. Be sure and ventilate your stable thoroly.

Tapeworm.—Have a pet dog that I am positive suffers from a tapeworm. Can a drug be given that will rid him of it? B. I. W., Gettysburg, Pa.—Give 1½ grains of powdered areca nut for every pound the dog weighs, every day for a few days until tape worm is dislodged. It may be necessary to give him castor oil, 2 hours after giving areca nut.

Hoof Ointment.—For the past three months I have been watching the columns of the Pennsylvania Farmer for a formula for a good hoof ointment, but so far have not seen it recommended. M. Y. O., Punxsawtawney, Pa.—Lanolin, (wool fat) is rather expensive, but it makes a nice ointment to soften dry hoofs. One part kerosene and 9 parts vaseline make another very good ointment; also 1 part coal-tar disinfectant and 9 parts vaseline; or mix 4 oz. of melted beeswax in ½ lb. of melted tallow and 1 lb of archangel tar, stirring this mixture until cool, then apply to hoofs every day or two. This will keep them soft and stimulate growth of horn.

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